

# The Mining Journal,

## RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

[The Mining Journal is Registered at the General Post Office as a Newspaper, and for Transmission Abroad]

No. 2316.—Vol. L.

LONDON, SATURDAY, JANUARY 10, 1880.

[WITH SUPPLEMENT.] PRICE ..... SIXPENCE.  
PER ANNUM, BY POST, £1 4s.

**MR. JAMES H. CROFTS, STOCK AND SHARE BROKER,**  
AND MINING SHARE DEALER,  
No. 1, FINCH LANE, CORNHILL, LONDON, E.C.  
ESTABLISHED 1842.

BUSINESS transacted in all descriptions of MINING Stocks and Shares (British and Foreign), Consols, Bonds (Foreign and Colonial), Railways, Insurance, Assurance, Telegraph, Tramway, Shipping, Canal, Gas, Water, and Dock Shares, and all Miscellaneous Shares.

BUSINESS negotiated in Stocks and Shares not having a general market value.

Every Friday a general and reliable List issued (a copy of which will be forwarded regularly on application), containing closing prices of the week.

BANKERS: CITY BANK, LONDON—SOUTH CORNWALL BANK, ST. AUUSTELL.

**SPECIAL DEALINGS** in the following, or part:—  
20 Asheton, £1 6s. 3d. 20 Glyn United. 150 Pestarena.  
25 Almada, 11s. 25 Glenroy, 19s. 6d. 100 Parys Corporat., 35s.  
25 Devon Consols, £2 3s. 25 Herodfoot, £2 17s. 6d. 20 Richmond, £10 17s. 6d.  
25 East Caradon, £2 3s. 100 Javali, 7s. 20 South Darren, £2 3s. 20 South Darren, £2 3s.  
25 East Van, £2 7s. 6d. 20 Killifreth, 12s. 6d. 20 Tankerville, £2 1s. 3d.  
150 East Roman Gravel. 5 Mineral Corporation. 25 West Asheton, £2 7s. 6d.  
10 Eberhardt, £2 5s. 50 No. D'Ereshy Mount. 20 W. Chiverton, £1 4s.  
20 Flagstaff, £2 5s. 25 Pandora, £1 3s. 9d. 25 Wheel Crebor, £2 3s.  
20 Panulillo, £2 5s.

BUSINESS in all TIN Shares.  
\* \* \* SHARES SOLD FOR FORWARD DELIVERY (ONE, TWO, OR THREE MONTHS) ON DEPOSIT OF TWENTY PER CENT.

**RAILWAYS—SPECIAL BUSINESS.**

**FOREIGN BONDS—SPECIAL BUSINESS.**

Fortnightly accounts opened on receipt of the usual cover.

JAMES H. CROFTS, 1, FINCH LANE, LONDON.  
ESTABLISHED 1842.

**MR. W. H. BUMPUS, STOCK AND SHARE BROKER,**  
AND MINING SHARE DEALER,  
44, THREADNEEDLE STREET, LONDON, E.C.  
ESTABLISHED 1867.

BUSINESS transacted in STOCK EXCHANGE SECURITIES

AND MISCELLANEOUS SHARES of every description.

RAILWAYS, BANKS, FOREIGN AND COLONIAL BONDS.

TRAMWAYS, TELEGRAPHS, and all the LEADING INVESTMENTS.

Accounts opened for the Fortnightly Settlement

A Stock and Share List free on application.

**MR. BUMPUS has SPECIAL BUSINESS** in the undermentioned:—  
25 Asheton, 28s. 40 Flagstaff, £2 3s. 3d. 25 Ruby, £5 6s. 3d.  
50 Almada, 15s. 70 Glenroy, 23s. 100 Rossa Grande.  
50 Blue Tent, 38s. 10 Gunnislake (Glitters). 10 Roman Grav., £12 1/2.  
175 Bodidrie. 5 Great Laxey, £18 1/2. 15 Richmond, £10 1/2.  
50 Bwch United, £2 3/4. 25 Great Holway. 50 South Crebor.  
20 East Van, £2 6s. 3d. 15 New Quebrada, £4 1/2. 15 West Peavor.  
30 Canada Gold. 20 Port Nigel, £2 1/2. 20 South Darren, £2 3s. 9d.  
40 Colorado, 35s. 15 Herodfoot, £2 3/4. 100 Tamar Silver-Lead.  
3 Carn Brea, £20. 20 Leadhills, £4 6s. 3d. 10 Tankerville, £2 1/2.  
25 Derwent. 10 Mellanear, £2 8s. 9d. 50 Tolima, B. 16s. 6d.  
50 Devon Consols, £9. 30 Marke Valley, 29s. 5 Van, £24.  
50 Don Pedro, 15s. 6d. 100 Nouveau Monde, 34s. 15 Wheel Jane.  
2 Dolcoath, £25. 15 New Quebrada, £4 1/2. 10 W. Slaters, £20.  
20 East Van, £2 6s. 3d. 20 Port Nigel, £2 1/2. 15 West Peavor.  
40 East Crebor. 20 Parys Copper, 34s. 20 Wheel Grenville, £2 1/2.  
25 East Caradon, £2 3/4. 15 Phenix Tin, £5. 5 West Frances.  
15 Eberhardt, £2 1s. 3d. 25 Panulillo, £2 1/2. 5 Wheel Peavor.  
10 East Lovell, £2. 100 Pestarena, 7s. 6d. 10 Wheel Uny, £2 3/4.  
20 East Chiverton, £2 1/2. 30 Pateley Bridge, 17s. 150 Yorko Penin., (pref.)  
60 East Roman Gravel. 100 Pant-y-Mwyn (off.w.) 20s.

**IMPORTANT TO INVESTORS.**

Large profits may be realised by the purchase of SHARES in SOUND well-selected MINES at present prices. Many of these are likely to advance considerably in market value during the next few months.

Mr. BUMPUS devotes special attention to these Securities, and is in a position to afford reliable information and advice to intending investors and others.

The following MINES are particularly recommended:—

\* TIN.—Wheel Peavor, Wheel Grenville, Carn Brea, West Peavor, Wheel Slaters, Phenix, West Frances, Wheel Jane.

\* COPPER.—Devon Consols, East Caradon, East Crebor, Hington, Gunnislake (Glitters), Panulillo.

LEAD.—Derwent, Port Nigel, South Darren, West Asheton, East Roman Gravel, Pateley Bridge.

SPECIAL BUSINESS, at close prices, in the SHARES of all the principal HOME and FOREIGN MINES.

A complete and reliable List of all the Leading Investments (published on the first of each month) may be obtained free on application to—

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BANKERS: THE NATIONAL PROVINCIAL BANK OF ENGLAND, E.C.

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10 Carn Brea. 20 West Peavor (specially recommended). 20 Wheel Grenville.

15 Cook's Kitchen. 40 West Basset. 150 West Kitty (specially recommended).

10 Dolcoath. 25 South Crofty. 10 South Frances.

25 East Caradon. 15 Wheel Peavor.

30 Wheel Uny. And a selected number of Foreign Mine Shares.

Inspecting agents in all parts of the country, and reliable advice given.

\* \* \* West Kitty shares are advancing. West Peavor shares I recommended last week. Price then, 7 to 7 1/2; price now, 9 to 9 1/2.

**MR. GEORGE BUDGE, STOCK AND SHARE DEALER,**

9, GRACECHURCH STREET, LONDON, E.C. (Established 27 years).

ALL BUSINESS TRANSACTED FREE OF ANY CHARGE FOR COMMISSION.

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Mr. BUDGE has SPECIAL DEALINGS in:—

50 Almada, 10s. 9d. 100 Exchequer, 7s. 50 North D'Ereshy, 20s.

70 Bedford, 8s. 40 East Chiverton, £2 3/4. 125 Parys Copper, 34s.

50 Bwch United. 100 Flagstaff, £2 3s. 9d. 10 Phenix, 5 1/2.

50 Chapel House. 10 Frongoch, £4 1/2. 100 Pestarena, 6s.

50 Canada Gold. 50 Gunnislake (Glitters), £2. 100 Pitangui.

50 Chontales, 10s. 20 Gwynion, £2 3/4. 200 Placerville.

3 Carn Brea, £22. 60 Grey's Brewery. 30 Panulillo, £2 3s. 9d.

### STOCK AND SHARE MARKETS.

Prices of STOCKS and SHARES in RAILWAYS, BANKS, ENGLISH and FOREIGN GOVERNMENT SECURITIES, GAS, MINES, INSURANCE, and other Stock Exchange Securities, and various important information forwarded on application to—

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BRITISH AND FOREIGN MONTHLY MINING NEWS

—STOCK AND SHARE INVESTMENT NOTES—MINES,

MINERALS, AND METAL MARKETS—SHARE LIST,

No. 813, VOL. XV., for DECEMBER month, is now ready, and will be sent to customers on application.

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DEALER at NET PRICES in EVERY DESCRIPTION of STOCKS and SHARES,

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ESTABLISHED 1853.

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**1880.** For Selections of genuine and promising Shares likely to give large profits, read "INVESTMENT NOTES" in this week's MINING JOURNAL, and send for the New Year's number of the INVESTORS' GAZETTE.

ALL BUSINESS transacted FREE of commission.

SPECIAL BUSINESS in ALL TIN, COPPER, and LEAD SHARES at CLOSEST POSSIBLE PRICES.

STOCK EXCHANGE BUSINESS DONE ON BEST TERMS.

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SPECIAL BUSINESS in the following:—

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Cardiff and Swansea. Herodfoot. South Frances.

Colorado. Leadhills. Tankerville.

Chontales. Last Chance. Van.

Derwent. Marke Valley. West Asheton.

Devon Consols. Nouveau Monde. West Chiverton.

Don Pedro. North Penstruthal. West Wheel Frances.

East Chiverton Consol. Pestarena. West Peavor.

East Lovell. Pateley Bridge. Wheel Jane.

East Van. Roman Gravel. Wheel Peavor.

East Caradon. Richmond. Wheel Grenville.

East Crebor. Ruby. Wheel Uny.

Flagstaff. South Darren.

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LONDON, E.C.

FORTNIGHTLY ACCOUNTS opened, on receipt of the usual "cover," in

Railways Home and Foreign, Mining Shares, Foreign Bonds, and certain Miscellaneous Securities.

"THE WEEK"—A SEPARATE EDITION from that which appears in the

Mining Journal is published every Wednesday evening, containing "Notes and

Hints on the Stock Markets," with Closing Prices. May be had on application.

BANKERS: LONDON AND WESTMINSTER, Lothbury.

**MR. W. B. COBB, STOCK AND SHARE DEALER,**

29, BISHOPSGATE STREET, LONDON, E.C.

Business transacted in every description of Stocks and Shares. Fortnightly

accounts opened on receipt of usual cover.

SPECIAL DEALINGS in the following, viz.:—

30 Bedford United. 20 Frongoch. 50 Pestarena.

75 Don Pedro. 60 Glenroy. 50 Rossa Grande.

5 Devon Consols. 20 Herodfoot. 10 Roman Gravel.

10 East Van. 10 Marke Valley. 20 South Darren.

30 East Crebor. 100 Nouveau Monde. 70 Tolima, B. 16s.

10 Eberhardt. 30 Parys Copper. 10 Tankerville.

20 Frongoch, £2 1/2. 20 Panulillo, £5. 50 Tecoma, 5s. 9d.

20 Pateley Bridge, 18s. 6d. 15 W. Asheton, £3 10s.

100 Pestarena, 6s. 6d. 20 W. Chiverton, £2 6s. 3d.

50 Port Phillip, 9s. 9d. 20 W. Pateley Br., £2 6s. 6d.

50 Glenroy, 21s. 3d. 20 Wheel Crebor, £2 5s. 6d.

BWLCH UNITED MINES—SPECIAL BUSINESS in these shares.

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FOR

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PER ANNUM ON PRESENT OUTLAY.

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It is a Reliable "Guide," giving valuable information and Sound Advice, &c.

It gives Market prices; Dividends upon outlay, when payable; Reports, &c., &c.

IT CONTAINS ALL THE SAFE INVESTMENTS IN THE FOLLOWING:—

English, Foreign Railways. Insurance, Gas, Waterworks.

Preference, Debenture Stocks. Colonial, Foreign Stocks.

Indian, American Stocks. British, Foreign, Colonial Mines.

Bank, Financial Shares. Tea, Land Shares.

Tramway, Telegraph Shares. Shipping, Dock Shares.

Municipal Bonds. Miscellaneous Shares, &c., &c.

**HENRY GOULD SHARP, STOCK AND SHARE BROKER,**

42, POULTRY, LONDON, E.C.—ESTABLISHED 1852.

BANKERS: LONDON AND WESTMINSTER, Lothbury, LONDON, E.C.

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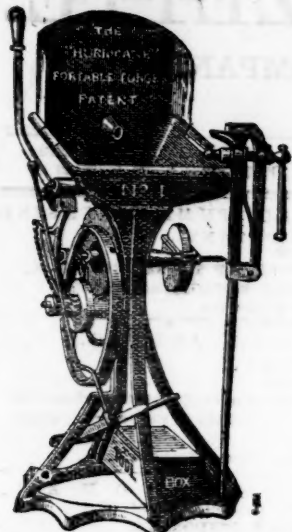
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A Complete and Portable Smithy, possessing a Powerful Blast, a Forge, a Hearth, a Vice, an Anvil,



a Tool Grinder, (Emery), a Cutter, Circular Saw, and Bench, a Chuck, Two Drills, a Drill Rest, and a Tool Box.

PATENTED IN EUROPE AND AMERICA.



The "HURRICANE" Patent Portable Forges possess advantages unobtainable with Forges of any other description. They commend themselves to the world, not only as being complete and portable Smithies of the highest practical value, but also for the extreme ease with which they are worked, the simplicity and compactness of their construction, and the steady continuous blast which speedily creates an unusually high degree of heat. The "Hurricane" Portable Forges are made in five distinct sizes and suitable for all purposes.

The Lever Handle can be used at any angle, or taken off altogether, and the Treadle used instead. There is a Recovering Spring to raise the Handle or Treadle. This arrangement secures all the easy motion of the old-fashioned bellows, is worked with much less effort than the Rotary Hand Wheel, and there are no Leather Bands to be burnt, no Cranks, and consequently no "Dead Centres."

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No. 1.—FORGE, HEARTH (lined with fire-brick), and PAN 18 in. square, 2 ft. 7 in. high. Weight 132 lbs., with 8 in. patent Fan Blast and Emery Tool Grinder, complete, on a pedestal or standard. Muffler, 15s. extra.	£5 5s. Od.
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No. 2.—FORGE, HEARTH 26 in. by 34 in. Weight, 160 lbs.: 10-in. patent Fan-blast and 5-in. Emery Wheel, complete on frame with four legs. Lever and Treadle. Hood, 21s. extra.	£7 7s. Od.
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EVERY COIL OF FUSE MANUFACTURED by them has TWO SEPARATE THREADS PASSING THROUGH the COLUMNS OF GUNPOWDER, and BICKFORD, SMITH, AND CO. CLAIM SUCH TWO SEPARATE THREADS AS THEIR TRADE MARK.

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BLASTING FUSE FOR MINING AND ENGINEERING PURPOSES

Suitable for Wet or Dry Ground, and effective in Tropical or Polar Climates.

W. BENNETTS, having had many years' experience as Chief Engineer with Messrs. Bickford, Smith, and Co., is now enabled to offer Fuse of every variety of his own manufacture, of best quality, and at moderate prices.  
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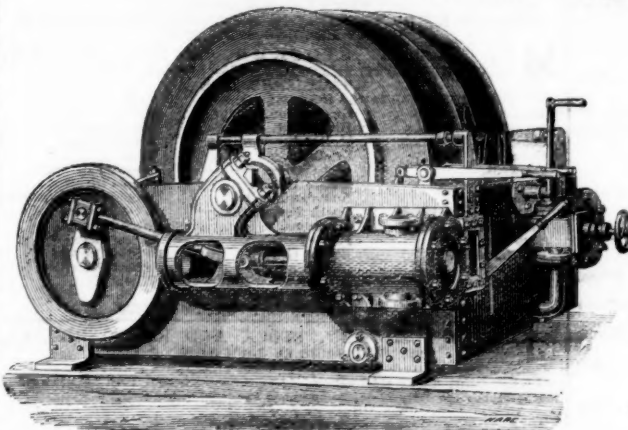
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DESIGNED FOR USING COMPRESSED AIR OR STEAM.

SIMPLE, COMPACT, PORTABLE.

Silver Medal, Royal Cornwall Polytechnic Society, 1876.



No. 1 size, 7 in. single cylinder, with 2 ft. drums.  
No. 2 size, 9 in. single cylinder, 2 ft. 6 in. drums.  
A,— 6 in. double cylinder, with 2 ft. 3 in. drums.  
B,— 8 in. " " 3 ft. 0 in. drums.  
C,— 10 in. " " 3 ft. 6 in. drums.  
D,— 12 in. " " 4 ft. 6 in. drums.  
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[This Advertisement appears fortnightly.]

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Edge Tools, Spades and Shovels. Hand, Sledge, Stone Quarry, and Mining Hammers, Railway Contractors' and Mining Tools. Axes, Adzes, Pickaxes, Crow and Boring Bars, Wrought-iron Wheelbarrows.

The Original and Only Manufacturers of Best Crown Quality of Horse Shoes

PATENTEES AND MANUFACTURERS OF PATENT PUNCHED EYE PICKAXES, HORSE HAMMERS ADZES, and other TOOLS.  
Under Patent No. 4698.



By a special method of preparation this leather is made solid, perfectly close in texture and impermeable to water; it has, therefore, all the qualifications essential for pump buckets, and is the most durable material of which they can be made. It may be had of all dealers in leather, and of—

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LEATHER MILL BAND AND HOSE PIPE MANUFACTURERS,  
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MILL BANDS, HOSE, AND LEATHER FOR MACHINERY PURPOSES.

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GAS AND HYDRAULIC ENGINEER,

94, CHARLES HENRY STREET, BIRMINGHAM

**THE IRON AND COAL TRADES' REVIEW**  
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Office of the Review: 7, Westminster Chambers, S.W.  
Remittances payable to W. T. Pringle.



## Registration of New Companies.

The following joint-stock companies have been duly registered:—

**THE MYNYDD GORDU LEAD MINE (Limited).**—Capital 40,000*l.*, in shares of 4*l.*, of which 9800 are to be paid up to 3*l.*, and 200 fully paid, according to an agreement made between W. A. M. Brown, the liquidator of the Mynydd Gordu Lead Mine (Limited), and this company, being in pursuance with resolutions passed at general meetings. The searching for, mining, working, winning, digging, raising, purchasing, or otherwise acquiring, and the crushing, washing, reducing, burning, manufacturing, and otherwise making merchantable, of lead, silver-lead, blende, copper, clay, brick-earth, &c.; the dealing in, selling, and otherwise disposing of same, and generally to carry on the business of a mining company in all its branches. The subscribers are—F. Thompson, Wimbledon Park, merchant, 8; R. Lardner, 4, Finsbury-circus, coalowner, 8; S. Kingchurch, 7, Great St. Helen's, merchant, 8; H. J. McCulloch, 178, Gresham House, civil engineer, 8; J. Ashwell, 95, Highgate-road, contractor, 8; J. Rickett, Hampstead, builder, 8; A. Milsted, Chelsea, coalowner, 2. The number of directors not to exceed nine, or be less than three. The first directors shall be determined by the subscribers to the Articles of Association.

**STOWELEY GAS LIGHT AND COKE COMPANY (Limited).**—Originally incorporated in 1856, is now registered under the Companies Act of 1862.

**THE GREAT TOWER-STREET TEA COMPANY (Limited).**—Capital 20,000*l.*, in shares of 10*l.*. To carry on the business of merchants and agents in all its branches. The subscribers are—T. Lough, Surbiton, 399; W. Lough, Barnsbury-square, 999; C. E. Walker, Finsbury Park, 399; A. H. Jones, Arundel-square, 399; L. A. Mills, 40, Lonsdale-square, 399; E. H. Mills, 40, Lonsdale-square, 2; M. Walker, Londonderry, 3.

**THE LONDON AND PROVINCIAL CREDITORS' AGENCY (Limited).**—Capital 100,000*l.*, in shares of 5*l.*. To advance moneys upon creditors' claims, and on all other kinds of securities. The subscribers (who take one share each) are—W. Bach, 12, St. Benet's-place; J. Saunders, Peckham; A. Carson, Highbury; J. Gooch, Richmond; W. B. Garrett, 63, Great Tower-street; A. B. Fuller, Hackney; J. H. Lawrence, Lee.

**GRIFFITH, WILLIAMS, AND COMPANY (Limited).**—Capital 10,000*l.*, in shares of 10*l.*. To carry into effect an agreement for the purchase of the business of G. Williams, at Canarvon and Liverpool, of slate and stone merchants, and to carry on the same. The subscribers (who take one share each) are—T. H. Dawkins, 20, Upper Grosvenor-street; J. Menzies, Carnarvon; T. H. C. Newton, Henley in Arden; G. W. B. de Yorburgh, York; W. B. Jeffrey, Carnarvon; W. L. Williams, Carnarvon; Griffith Williams, Carnarvon.

**THE HALSTEAD GAS COMPANY (Limited).**—Capital 10,000*l.*, in shares of 10*l.*. To acquire the existing gas-works at Halstead, and to carry on the manufacture of gas, coke, &c.—The subscribers are—G. W. Harris, Halstead, 5; T. May, Colchester, 8; R. R. Morton, Halstead, 1; F. Harris, Halstead, 1; L. Greenwood, Halstead, 3; R. E. Greenwood, Halstead, 984; W. Moye, Halstead, 1.

**THE COMPRESSED AIR ENGINES COMPANY (Limited).**—Capital 3000*l.*, in shares of 10*l.*. To construct certain engines, machinery, apparatus, plant, tram, railway, and other cars, &c. The subscribers are—F. J. Bladdon, Upper Norwood, 40; J. R. Clipperton, Upper Norwood, 10; W. Wilson, 18, Billiter-street, 10; C. C. Ellis, 19, St. Swithin's-lane, 10; W. H. Nethercliff, Chelsea, 10; E. Ingham, Crawley, 10; J. H. Munday, 19, St. Swithin's-lane, 10.

**GLOBE OIL COMPANY (Limited).**—Capital 5000*l.*, in shares of 5*l.*. To make and deal in all descriptions of oils, grease, tallow, fat, &c. The subscribers are—D. M. Yamans, 13, Lexham Gardens, 20; T. Carlton, 63, Queen Victoria-street, 20; O. Gibson, 10, Maitland Park Villas, 1; J. C. Taite, Whitehall Club, 20; A. L. Sacoe, 69, Queen Victoria-street, 19; H. S. Roberts, Highgate, 1; H. A. McDuffee, 63, Queen Victoria-street, 19.

**THE SPENNYMOOR IRON AND STEEL WORKS COMPANY (Limited).**—Capital 20,000*l.*, in shares of 10*l.*. To acquire certain works situate at Merrington, and to continue the business. The subscribers (who take one share each) are—J. E. Somerville, Leytonstone; G. E. Laverack, Leytonstone; F. Melhuish, Forest Hill; J. A. Reid, Forest Hill; C. E. Barnett, Forest Hill; E. Greenfield, Streatham; W. Macey, 24, Love-lane.

**THOMAS ROBINSON AND SON (Limited).**—Capital 200,000*l.*, in shares of 50*l.*. The acquisition of saw-mills, engineering, and wood-cutting machine works, situate in Rochdale, with the machinery, plant, assets, &c., of the firm of T. Robinson and Son, and to carry on the business. The subscribers (who take one share each) are—J. S. Robinson, Rochdale; P. H. Robinson, Rochdale; T. M. Robinson, Rochdale; John Smith, Rochdale; J. Hutchison, Rochdale; C. Hoyle, Rochdale; J. P. Fielden, Rochdale.

## WATSON BROTHERS' MINING CIRCULAR.

**WATSON BROTHERS,**  
MINEOWNERS, STOCK AND SHARE DEALERS, &c  
1, ST. MICHAEL'S ALLEY, CORNHILL, LONDON.

In the year 1843, when mining was almost unknown to the general public attention was first called to its advantages, when properly conducted, in the "Compendium of British Mining," commenced in 1837, and published in 1843, by Mr. WATSON, F.G.S., author of "Gleanings among Mines and Miners," "Records of Ancient Mining," "Cornish Notes" (first series, 1862), "Cornish Notes" (second series, 1863), "The Progress of Mining," with Statistics of the Mining Interest, annually for 21 years, &c., &c. In the Compendium, published in 1843, Mr. WATSON was the first to recommend the system of a "division of small risks in several mines, ensuring the success in the aggregate," and Messrs. WATSON BROTHERS have always a selected list on hand. Perhaps at no former period in the annals of mining has there been more peculiar need of honest and experienced advice in regard to mines and sharedealing than there is at present; and from the lengthened experience of Messrs. WATSON BROTHERS they are enabled to offer, to this public, their best services and advice to all connected with mines and mining.

Messrs. WATSON BROTHERS are daily asked their opinion of particular mines, as well as to recommend mines to invest or speculate in, and they give their advice and recommend mines to the best of their judgment and ability, founded on the best practical advice they can obtain from the mining districts; but they will not be held responsible, nor subject to blame, if results do not always equal the expectations they may have held out in a property so fluctuating as mining.

**PARYS CORPORATION.**—Although in the Share List this company stands at 45,000 shares of 1*l.* each, only 32,500 have, in fact, been issued: 22,500 were given to the old shareholders, fully paid up, for the property, and 10,000 issued at 10*s.* for working capital. Thus 12,500 remain unissued, and are held as a reserve.

**MORFA DU** is in 11,250 shares of 1*l.* each, but less than 8000 have been issued.

**PITANQUI** is in 25,000 shares of 1*l.* each, 10*s.* paid up on 16,000, so that the reserve capital is 10*s.* per share uncalled on 16,000 shares, and 3000 shares of 1*l.* each held in reserve: 6000 fully paid-up shares were given for the property.

**GLENROY** is in 14,000 shares of 4*l.* each, and the working capital consists of 2*l.* 5*s.* per share due on a large number of shares, which cannot be transferred until it is paid up.

The **NOUVEAU MONDE COMPANY** was formed in Paris about the year 1851 as a "Compagnie en Commandite," for working gold mines in California, with a capital of 5,000,000 frs., in shares to bearer of 25 frs. each. The London agent was Mr. John Taylor, jun. In 1852 the shares were at 200 per cent. premium. Mr. Watson, in his Review of that year, showed that seven Californian gold mines, then the rage, had a paid-up capital of 760,000*l.*, and stood at a market value of 1,415,000*l.* Of six Australian gold companies at the same time the paid-up capital was 610,000*l.*, and the market value 1,285,000*l.* Of the latter we think Port Phillip, which then stood at 375,000*l.*, is the only one remaining. Of the Californian all were reckoned dead a short time ago, until Nouveau Monde started to life, and there has been a general search through the papers of old speculators to find the scrip which had been thrown aside as worthless, and now comes out again at a premium after nearly 30 years! The company is said to have bought a gold property in Venezuela some years ago, and that is "turning up," but nothing positive seems known. The Callao

Mine, which it is also said adjoins that belonging to Nouveau Monde, is in 32 shares only, and paying something like 2000*l.* a year on each share.

The prospects in the Minera Day Level, at the Park Lead Mines, have improved. Boring machinery has been introduced, and the mines are soon expected to pay cost. So far all the mines around Minera have been disappointments, and have entailed serious losses, but the Park has struggled on, and we wish the shareholders the success they deserve.

**ABERLLEYN.**—The special report made for the company will be found in another column.

**D'ERESBY MOUNTAIN.**—Mr. Waters values the two points of operation at No. 5 level—the sump and the stope, at 4 to 4½ tons of lead ore per fathom for the width, 18 ft. This was the point to which his attention was particularly directed, and he advises sinking below the No. 5 for another level as speedily as possible, and also extending the level southwards to the junction of the other lodes.

**PARYS CORPORATION.**—The lode lately cut in the 90 south is running south of east and north of west, and dips slightly towards the north-east. It is 4 ft. wide as far as cut into, worth 4 tons of copper ore per fathom. The ore is, some of it, 12 to 15 per cent. for copper, but the average would be about 8 per cent., making the lode worth 25*l.* per fathom. We mentioned last week that there was some doubt as to whether this was the great lode or not. The agent is inclined to think that it is a caunter lode, and in course of a few fathoms may form a junction with the great east and west lode, where there will be a chance of meeting with a great bunch of ore.

The improvement in South Caradon, which has caused a rise of 50*l.* per share during the week, is in the 200 fm. level at Rule's shaft, and on Holman's lode. At several levels above this lode has either been missed or poor, and it is now cut at the 200, being worth 3 tons (or 24*l.*) per fathom, and it is an important discovery.

At D'Eresby Consols the agents have been testing one of the branches found in the cross-cut towards the Cobbler's lode, and from the north end, near the forebreast, some nice stones of lead and blende have been broken this week.

Wheal Crebors are decidedly better (worth 10*l.* per share) for investment now than they were when the discovery was first made, and the shares got up to that price in the market.

We have this week received letters from all parts of the country asking us for particulars of Sentein, and whether we recommend a purchase of the share. The latter would depend upon the price, and the state of the finances of the company, which we hope to obtain shortly. We have more than once referred to the merits of the property. There are 32,000 shares, with 1*l.* paid up.

We feel greatly indebted for the confidence displayed by so many correspondents this week, who upon the mere announcement of our mine for the "New Year" have, without waiting for particulars, applied for such a large number of shares. One asks for 500 shares, and others 250 each, so that there is no fear of the thing floating and going to a good premium. As other things are selling, the price charged for this mine might have been more than double what it is, for there is scarcely any speculation in it, and only a little time and

money required to get the new shaft under the ore ground. Full particulars, however, are now given, with a sketch to show the ore ground.

**SATURDAY, JAN. 3.**—Active demand for shares in all mines. Carn Brea, 75 to 80; Devon Great Consols, 6½ to 7; Dolcoath, 55 to 60; East Caradon, 2½ to 3; East Pool, 22 to 23; Glenroy Lead, 17s. 6d. to 22s. 6d.; Great Laxey, 18 to 19; Grogwinion, 3½ to 3¾; Herodsfoot, 2½ to 3½; Leadhills, 4 to 4½; Mellanear, 4½ to 4¾; Marke Valley, 25s. to 30s.; Moria Du, 20s. to 25s.; Parys Copper, 32s. to 34s.; East Crebors, 20s. to 25s.; Prince of Wales, 10s. to 15s.; Roman Gravel, 12½ to 13; South Caradon, 70 to 75; South Condurow, 12½ to 13½; South Darren, 3 to 3½; South Frances, 11 to 11½; Tankerville, 5½ to 6; Tincroft, 16 to 17; Van, 23 to 24; West Assheton, 3 to 3½; West Basset, 12 to 13; West Chiverton, 1½ to 2; West Frances, 18 to 20; West Seton, 45 to 50; West Tolgus, 24 to 26; Agar, 6½ to 6¾; Crebors, 7 to 7½; Grenville, 4 to 4½; Peavor, 22 to 23; Cape Copper, 33 to 35; Don Pedro, 11s. 6d. to 13s. 6d.; Richmond, 10½ to 10¾; Santa Barbara, 2 to 2½.

**MONDAY, JAN. 5.**—Market continues firm. Van, 23 to 25; Great Laxey, 18½ to 19½; Roman Gravel, 12½ to 13½; West Assheton, 3½ to 3¾; South Darren, 3 to 3½; Carn Brea, 77½ to 80; Dolcoath, 57 to 59; Tincroft, 16 to 17; South Frances, 13 to 14; West Frances, 18 to 20; Agar, 6½ to 7; Peavor, 23 to 24; Grenville, 4½ to 5; Crebors, 7½ to 7¾; Devon Great Consols, 7½ to 7¾; Parys Copper, 32s. 6d. to 35s.; Prince of Wales, 10s. to 15s.; East Crebors, 20s. to 25s.; Moria Du, 20s. to 22s. 6d.; Marke Valley, 25s. to 30s.; South Caradon, 70 to 80; Richmond, 10½ to 11; New Quebrada, 4 to 4½; Panulillo Copper, 5 to 5½; Cape Copper, 33 to 35; Don Pedro, 14s. to 16s.

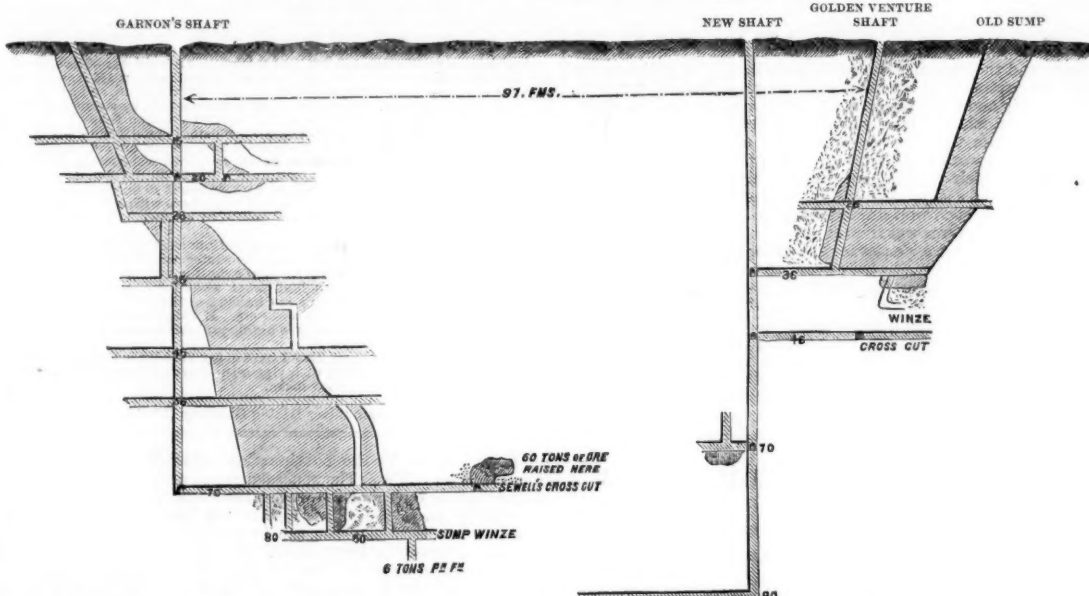
**TUESDAY, JAN. 6.**—Market very active, and prices are as follows:—Carn Brea, 75 to 80; Devon Great Consols, 7 to 7½; Dolcoath, 55 to 60; East Caradon, 2½ to 3; East Pool, 24 to 26; East Van, 2 to 2½; Glenroy Lead, 17s. 6d. to 22s. 6d.; Great Laxey, 18 to 19; Grogwinion, 3½ to 3¾; Herodsfoot, 3 to 3½; Hington Down, 10s. to 12s. 6d.; Leadhills, 4 to 4½; Mellanear, 4½ to 4¾; Marke Valley, 25s. to 30s.; Moria Du, 20s. to 25s.; Parys Copper, 32s. 6d. to 35s.; Pateley Bridge, 15s. to 20s.; Prince of Wales, 10s. to 15s.; Roman Gravel, 12½ to 13½; South Caradon, 70 to 80; South Condurow, 11½ to 12½, ex div.; South Darren, 3 to 3½; South Frances, 13½ to 14; Tankerville, 5½ to 6; Tincroft, 16 to 17; Van, 23 to 25; West Assheton, 3½ to 3¾; West Chiverton, 1½ to 2; West Frances, 18 to 20; West Seton, 45 to 50; West Tolgus, 25 to 27; West Wye Valley, 15s. to 25s.; Agar, 6½ to 7; Crebors, 7½ to 8; Grenville, 4½ to 5½; Peavor, 24 to 26; Cape Copper, 34 to 36; Colorado, 1½ to 1¾; Don Pedro, 13s. 6d. to 15s. 6d.; Eberhardt, 2½ to 3½; Flegstaff, 2 to 2½; Frontino, 2½ to 2¾; New Quebrada, 4 to 4½; Panulillo Copper, 5 to 5½; Richmond, 10½ to 11; Santa Barbara, 2 to 2½.

**WEDNESDAY, JAN. 7.**—Market very strong, and shares scarce in all mines. Caradon have advanced 40*l.* South Caradon, 110 to 120; West Tolgus, 26 to 28; Crebors, 7½ to 8½; Devon Great Consols, 7½ to 7¾; Parys Copper, 33s. to 35s.; North Penstruthal, 20s. to 22s. 6d.; Mellanear 4½ to 4¾; Mori Du, 20s. to 25s.; Carn Brea, 77½ to 80; Dolcoath, 58 to 60; East Pool, 24 to 26; South Condurow, 12 to 12½; South Frances, 13½ to 14; Tincroft, 16 to 17; Agar, 6½ to 7; Grenville, 4½ to 5½; Peavor, 24 to 26; Ury, 2½ to 2¾; Cook's Kitchen, 4½ to 5½; Roman Gravel, 12½ to 13½; Van, 23 to 25; Great Laxey, 18½ to 19½; Herodsfoot, 2½ to 3½; Pateley Bridge, 15s. to 20s.; South Darren, 3 to 3½; Tankerville, 5½ to 6; West Chiverton, 1½ to 1¾; West Seton, 45 to 50; Don Pedro, 14s. to 16s.; Flegstaff, 2½ to 2¾; New Quebrada, 4½ to 4¾; Richmond 10½ to 11.

**THURSDAY, JAN. 8.**—A further rise of 15*l.* per share in South Caradon has caused great excitement in the market, and prices in most cases have advanced. South Caradon, 125 to 150; Devon Great Consols, 9 to 9½; East Caradon, 4 to 5; East Pool, 25 to 30; Peavor, 25 to 27½; Tincroft, 17 to 19; West Basset, 14 to 16; Ury, 2½ to 3½; Van, 24 to 26; Grenville, 5½ to 6; North Penstruthal, 20s. to 22s. 6d.; Carn Brea, 77½ to 80; Dolcoath, 58 to 60; Herodsfoot, 3 to 3½; Parys Copper, 30s. to 35s.; Roman Gravel, 12½ to 13½; South Frances, 13½ to 14½; South Condurow, 12 to 13; West Seton, 45 to 50; Crebors, 7½ to 8; East Van, 2 to 2½; Glenroy Lead, 17s. 6d. to 22s. 6d.; Great Laxey, 18½ to 19½; Leadhills, 4 to 4½; Mellanear, 4½ to 4¾; Moria Du, 20s. to 25s.; West Assheton, 3½ to 3¾; Cape Copper, 34 to 36; Eberhardt, 3 to 3½; Don Pedro, 14s. to 16s.; Panulillo Copper, 5 to 5½; Richmond, 10½ to 10¾; Santa Barbara, 2 to 2½.

**FRIDAY, JAN. 9.**—Market generally weaker. Devon Great Consols, East Caradon, and West Seton flatter. Dolcoath, 57½ to 60; Carn Brea, 77½ to 80; South Frances, 13½ to 13¾; Tincroft, 17½ to 18½; West Basset, 14 to 15; West Frances, 18 to 19; Peavor, 25 to 27; Ury, 3½ to 4; East Pool, 25 to 27; West Condurow, 130 to 140; Devon Great Consols, 8½ to 9½; Crebors, 7½ to 8½; East Caradon, 3½ to 3¾; West Seton, 42½ to 47½; West Tolgus, 26 to 28; Great Laxey, 18½ to 19½; Van, 23 to 25; Herodsfoot, 3 to 3½; Leadhills, 4 to 4½; Moria Du, 20s. to 25s.; Parys Copper, 30s. to 35s.; South Darren, 3 to 3½; Roman Gravel, 12½ to 13½; Glenroy Lead, 17s. 6d. to 22s. 6d.; East Van, 2 to 2½; West Assheton, 3½ to 3¾; Don Pedro, 14s. to 16s.; Richmond, 10½ to 10¾; Cape Copper, 35 to 37; Panulillo, 5 to 5½.

## SOMETHING GOOD FOR THE NEW YEAR.



NOTE.—The shading shows the ore ground taken away above the 80, at Garnon's, and the 36, at Golden Venture. They dip towards a junction in depth.

In the year 1873, upon the advice and reports of the best practical agents of the day, we ourselves subscribed 1000*l.*, and five other gentlemen did the same thing, making 6000*l.* in all, to carry on certain works, which had already cost 6000*l.*, at the Symde Dyluan Mine, in Carnarvon, from which we were told about 100,000*l.* of ore had been raised down to the 80 fathom level, and a sump winze below that had been carried as deep as the water would allow, worth 6 tons of rich copper ore per fathom, and it was hoped the money thus subscribed would open out a mine worth 50,000*l.* or 100,000*l.* at least; but the ground in sinking a new shaft from surface was very hard, and in 1876 we found the 6000*l.* expended, and the ore ground not reached. And, as copper had fallen considerably, it was determined to cease operations till better times, and to hold on the mine by paying the dead rent and taking care of the machinery.

We have now persuaded the proprietors to form it into a limited company, in 20,000 shares of 1*l.* each. For the mine, machinery, and work done they will take 12,000*l.*, in fully paid-up shares; 5000 will be allotted at par to first applicants, and 3000 to remain unissued. The mine is held on lease (33 years unexpired) at a royalty of 1-16th, and a dead rent of 50*l.* a year—merging in royalty. It is worked entirely by water-power, which never fails winter or summer. The plant consists of two water-wheels, all necessary machinery, including crusher, dressing-floors, sheds, &c. The ores are rich, yielding 8 to 12 per cent. As much as 30,000*l.* worth of ore has been raised in a single year from Garnon's shaft, now 80 fms. deep only, and a winze below the 80 (under water) is in a lode worth 6 tons of ore per fathom. To test this, in 1873 the water was pumped out by hand, and the lode seen and reported upon by Capt. Mitchell, of Parys Mountain.

The plan annexed to this will show that there are two courses of ore—that of Garnon's and that of Golden Venture—dipping towards each other, so as to form a junction in depth. The chief deposit, that at Garnon's, dipped so far away from the shaft, and the winze being under water, it was resolved to commence a new shaft from surface, and sink it—1, so as to drive and get under the rich course of ore in the winze; 2, to sink down to the junction of the two courses of ore, which will be best understood by a reference to the plan. The new shaft in hard ground took more than four years to sink, and cost a large sum of money. It is down to the 90, and a cross-cut driven to within 12 fms. of the winze. The shaft was commenced by Capt. Sandoe, of D'Eresby Mountain, and continued to its present depth by Capt. Roberts, also of D'Eresby Mountain, and while at the mines they returned 900 tons of ore.

It is now proposed to fork the mine, put in larger pumps, continue

the cross-cut towards Garnon's, and sink the shaft towards the junction of the two courses of ore. It may be mentioned that the mine adjoins a very rich mine—Drwys-y-Coed—which has been productive for 100 years, and has made enormous returns.

The 5000 shares to be issued at par will be allotted to first applicants. The name of the company will be "The Carnarvon Copper Company (Limited)," in 20,000 shares of 1*l.* each. No prospectus will be issued, and the directors will be chosen at the first meeting.

*Symde Dyluan, Nov. 6, 1879.*—I find that to reach the line of the course of ore in the sump at the 80, from the 90 at the new shaft, it will require to drive about 12 fms. more; and to reach the slide, which has invariably let down all the water to the lowest level as soon as it is cut through, about 14 fms. I think that I have told you before that I am not of opinion that the lode we drove on at the 90 is the same lode as that is in the sump at the bottom of the 80, but another distinct side lode. If this be correct, it will be a great addition to the value of the mine, as this lode where it forms a junction with the slide will be quite as valuable as the other lodes in all the levels. You will remember that it was this slide that produced nearly all the ore in the lodes at Garnon's. The last price that we gave for driving the 90 at the new shaft was 13*l.* per fathom. Wages were then 20 per cent. higher than they are now, which would bring the price down to 10*l.* or 11*l.* per fathom. To drive up to the slide which would let down the water from the 80 would require about six months after the water is got out. There can be no question as to finding a good lode at this (90) level, as the course of ore has been continuous from surface down below the 80 fm. level, and the last 9 ft. we sunk in the sump produced 10 tons 8 cwt. of ore of 10 per cent. copper. Between the 80 and 90 I expect that the lode is very much richer than it was between the 70 and 80, for, however singular it may appear, the lode all the way down from surface made very much richer at every other level; between the 70 and 80 the lode was comparatively poor, so, according to the rule, we may expect at the 90 a splendid course of copper. At the 70, at Garnon's, we discovered a distinct bunch of ore, which I think is a continuation of one of the shoots of ore worked on at Caer-y-Groes at the shallower levels. We stopped a few fathoms in the roof, and raised 50 tons of ore, and there is now good ore in the lode both in the roof and in the bottom, and will do to work with a good price for the ore. If this be a continuation of one of Caer-y-Groes bunches we have a very high piece of ground standing between this and the 25, the lowest point on which it has been worked. You will remember that the Caer-y-Groes bunches were lost at the 26 and 36 fm. levels, and that very little was done to find them again. We followed down one run of ore in a winze at the 36, but the water was too quick for us. The main object should be now what it was before—to get a communication between the 90 at the new shaft and the 80 at Garnon's. This will open the mine in a way that every part of it can be commanded from the new shaft, which is perpendicular from surface to the bottom, in hard ground and well divided down. During my time we sold about 400 tons of ore, and I think my predecessor (Capt. Sandoe) sold about 500 tons; the average value of the ore was about 8 per cent., as we used to dress it, but I have no hesitation in saying that with one of our new jiggers we could make an average produce of 12 with very little loss, for if we can jig blende clean, why not copper that has a higher specific gravity? By dressing the ore clean there would be not only a better price in proportion for the ore, but would save so much more in the freight, which from the mine to the nearest smelting works is 15*s.* per ton. I have no hesitation in saying that I know of no mine, with a good price for copper, that better deserves working.—JOHN ROBERTS.



# Newton Silver Mining Company

(LIMITED)

HARROWBARROW, CALSTOCK, CORNWALL.

Capital £10,000, in £1 Shares.

5s. on application; 5s. on allotment; the remainder at intervals of three months, as required.

## DIRECTORS.

Mr. JOHN WHITEHOUSE, Horsley Fields, Wolverhampton.—CHAIRMAN.  
Mr. J. O. LEE, Ivy Cliff, Goldthorn Hill, Wolverhampton.  
Mr. JAMES HULL, 34, High Street, Birmingham.  
Mr. G. R. PAYNE, Gladstone Road, Sparkbrook, Birmingham.  
Mr. ABEL PEARSALL, 29, St. Martin's Street, Birmingham.

## BANKERS.

NATIONAL PROVINCIAL BANK OF ENGLAND, Birmingham Branch.

## SOLICITORS.

MESSRS. JOHNSON, BARCLAY, AND JOHNSON, Waterloo Street, Birmingham.

## SECRETARY.

Mr. ARTHUR C. COX, 2, Temple Street, Birmingham.

SECOND ISSUE OF 5000 SHARES.

This company was successfully formed in the early part of last year (1879), for the purchase of the mine known as The Queen Silver Mine, containing an area of 150 acres, and situated at Harrowbarrow, parish of Calstock, Cornwall, held under leases from the Duchy of Cornwall and Miss Bennett, with plant and machinery, and which said mine was up to September, 1878, worked by the Wheal Newton Company (Limited) with most extraordinary results so far as the output of the mine was concerned, the yield of silver having been almost unprecedented in richness, as may be judged from the following facts:—During the short period of less than eighteen months—from February, 1877, to July, 1878—upwards of 238 tons of silver ore was raised, of a total value exceeding £10,000. Some parcels fetched very high prices, varying from £495 to £534 10s. per ton, and one parcel of several hundredweights sold at the rate of nearly £1700 per ton. These figures are taken from authentic records.

The Wheal Newton Company, however, were compelled to suspend operations, in consequence of financial complications with other companies associated with them, and the mine came into possession of a mortgagee, from whom it was purchased by this company under an agreement by which the company obtained possession and the right of working for twelve months, upon payment of a deposit of £550 (the total purchase money being £2550), with the option of either completing the purchase in twelve months' time or of forfeiting the deposit and giving up the mine.

The deposit was duly paid, and the mine has been vigorously worked since May last under the management of Capt. Bennett. A considerable amount of dead work of a necessarily unproductive character had to be done in the first place, and this caused much delay in the operations. Since this was completed, however, the appearance of the ground has been most promising in the various lodes, and since September there have been monthly sales of silver ore; not, however, in large quantities.

The directors are themselves the largest shareholders in the company, which is an entirely independent concern of a perfectly bona fide nature, and they are anxious to do their best, by a judicious expenditure of capital upon the most promising portions of the mine, to earn a speedy and large return both for themselves and the shareholders generally, whose interests are identical with their own. They feel confident, from the most recent reports of the very promising indications of the workings, that they are in the immediate neighbourhood of very rich deposits, and should this confidence prove to be well founded but a short time will be needed to attain the success of which they have such well grounded hopes.

The first issue of shares was limited to an amount sufficient to pay the deposit and working expenses for the 12 months. A second issue of 5000 shares is now offered to the present shareholders, to old shareholders of the Wheal Newton Company (Limited), and to the general public, for the purpose of paying the balance of purchase money, and of further developing the property, which the directors wish to do as speedily as possible. There are many highly promising points now standing idle, which, when the funds are forthcoming, can be vigorously prosecuted with every probability of an early discovery of large quantities of rich silver ore. The nature of the ground is easy, and comparatively inexpensive for working, and it should be re-

membered that it is not necessary to find large masses of ore in order to have good returns, and although the silver ore is seldom continuous in the lode yet bunches are constantly formed, and a fathom or two of ground has yielded thousands of pounds worth of silver. The report of Capt. Bennett, hereto annexed, will explain the present prospect of the mine, and if the operations therein suggested can be carried out the directors believe that large discoveries of silver ore will ensue, and the mine become a very valuable property.

Forms of Application for Shares and any further information may be obtained from the Solicitors to the company, from the Secretary, or from Capt. BENNETT, Redmoor House, Callington, Cornwall.

## REPORT OF CAPTAIN N. BENNETT.

Newton Silver Mine, Harrowbarrow, Jan. 3, 1880.

The above mine is traversed by the two principal silver-bearing lodes of the district—viz., the Wheal Langford, East Cornwall, known as the Well lode in this mine, and the Wheal Brothers and Silver Valley silver lode. The old Harrowbarrow copper and arsenical mudstone lode also runs through this sett, which is  $\frac{3}{4}$  mile long and over  $\frac{1}{2}$  mile in breadth. The engine-shaft is sunk about 7 fms. below the 44 fm. level, and the last 7 fathoms have been sunk on the Well lode, which is underlying south. The lode in the shaft is about 18 in. wide, of a very promising character. We have met with occasional stones of silver in sinking. This lode will form a junction with the south part of the Harrowbarrow lode in about 15 fms. further sinking, consequently I would strongly recommend the directors to commence operations again at this point, and sink the shaft to the junction of the two lodes, as it will be remembered that a rich course of silver ore was found at the junction of these two lodes at Cook's shaft. When the junction is reached at the engine-shaft a level should be extended west on it towards the large cross-course, and at the point of intersection I have not the slightest doubt but that we shall meet with a large and rich deposit of silver ore.

Cook's shaft has been sunk to the 50 fm. level on a very promising lode. This shaft I would advise being sunk deeper, and levels extended east and west, when there is every probability that we shall meet with silver in paying quantities. The 30 fm. level is driven west of the engine-shaft about 50 fms. Good stones of silver were found in driving this level, and I would also recommend that this level be pushed on as far as possible to intersect the large cross-course. The present operations are confined to the following points:—The 40 to drive east of Cook's shaft, by six men; the lode in the end is about  $1\frac{1}{2}$  ft. wide, composed of sulphur-mudstone, carbonate of iron, quartz, and flookan, and a little silver—about 8 ozs. to the ton. The 40 cross-cut to drive north, by six men, to intersect the Wheal Brothers silver lode which has not been seen below the adit, although it has been worked upon in the western part of the sett at a shallow depth with very profitable results. The 20 fm. level to drive east of Cook's shaft, by six men; the nature of the lode is similar to that in the 40, being about 2 ft. wide, and presenting a most promising appearance. The 20 fm. level to drive west of cross-cut, east of Cook's shaft, by two men; lode about 15 in. wide, composed of carbonate of iron, quartz, and rich stones of copper ore with a little silver. The shallow adit to drive north, on the cross-course, by six men, to intersect the Well lode on the western side.

The above constitutes the extent of our operations at present, but I would point out the desirability of further developing the western part of the sett, particularly on the Wheal Brothers lode, where Bennett's shaft is sunk 24 fms. from surface, and the ground east and west has been taken away for a great many fathoms from close to the surface to within a few fathoms of the bottom of the shaft, and has yielded large quantities of rich silver ore. If this shaft were sunk deeper, and levels extended east and west, it is highly probable that we should find a continuation of the same rich deposit.

In conclusion, I would remark that I have every confidence that by developing the points I have recommended with vigour the shareholders will be handsomely rewarded for any outlay they may make.

N. BENNETT.

To the Chairman, Newton Silver Mining Company (Limited).

## Lectures on Practical Mining in Germany.

CLAUSTHAL MINING SCHOOL NOTES\*—No. CXLIII.

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## EXCAVATION WORKINGS.

Excavation workings, or chamber workings, are usually adopted for very massive deposits, which are of a very strong character, and which it is intended to work completely out, and are, therefore, adopted in very thick lodes, where the mineral is more or less uniformly divided in the whole mass. Lottner distinguishes three modifications of chamber working.—1. When the empty spaces, or chambers, are filled with attle packing, sorted out from the ore, or introduced from the surface.—2. The ore as it is broken down is allowed to remain on the floor of the chamber, and forms a footing for the miner during the excavation of the chamber, being first carried away when the excavation is completed.—3. The chamber is excavated, the mineral being removed as it is got, and the chamber left vacant, as in the example (Altenberg) mentioned in the last lecture.

The working at Rammelsberg, near Goslar (the Hartz), is an example of the first modification. The deposit, which consists of two immense masses of galena and copper and iron pyrites, lying close together, is generally considered as a contact deposit, though it is more or less surrounded by the Wissenbach schiefer (a clay slate). The deposit is in form lozenge shaped, having a general strike from east to west. The thickness of the deposit varies, in some places reaching the enormous thickness of 350 ft. The dip is roughly 45°, and the length has been proved over 1800 ft. At a depth of 400 ft. beneath the surface the deposit sends out a large vein on the hanging side, which gradually wedges out. The deposit was worked in olden times in a more or less irregular manner, till the commencement of the present century. The deposit is reached by an adit, from which two principal shafts are sunk in the country rock, and from the latter the deposit is reached by cross-cuts driven every 10 fathoms, equal to about 22 yards apart, and 22 yards in depth to the lying wall of the deposit. From these cross-cuts levels are driven on both sides, half in the deposit and half in the country rock, in the direction of the length of the deposit. The deposit is divided along its length by cross levels from (20 to 24 fathoms), about 45 to 54 yards apart, into divisions, each alternate division being the object of the first excavation. In order to lessen the loss and difficulty attendant on working out the last yard of ground, on which rests the packed attle in the chamber above, each excavation is worked out continuously upwards for a height of 44 yards, corresponding to twice the depth of the cross-cuts apart. Between each chamber an equal length of solid ground remains, which is after-

wards worked out by the continuation upwards of the excavation from the level below. The general arrangement during the progress of the work is such that the excavations started from one level are immediately under the pillars left in the level above, and that the pillars of one level likewise are immediately beneath the excavations started from the level below. The size of the deposit will be better imagined when it is stated that from 60 to 80 years are required to complete the excavation of one of these divisions, or chambers. The excavations are started from the level which is situated close to the lying wall of the deposit; and either by means of blasting or fire setting the mineral is got out upwards and outwards towards the hanging side. As the roof and one side of the level are thus removed, the level is removed slightly further from the side of the lode, and built in elliptical in shape. As the excavation increases in size, especially towards the hanging side, a dry wall is built at a convenient distance from the lying side of the deposit, the space between the lying side and the wall being filled up with attle packing to the height of the wall; so that it forms a raised floor for the miners, which enables them easily to work at the roof of the excavation. Similar walls are built up in the direction of the strike of the deposit as the excavation advances towards the hanging side, the space between the last two walls being next filled up with packing to the height of the walls.

Since the great part of the deposit furnishes little or no material for filling the enormous vacant spaces thus formed, material has to be introduced from the surface. For this purpose the geologically underlying Calceola sandstone is worked from a quarry on the side of the Rammelsberg Mountain, and is introduced into the mine by a special shaft, fitted up with a break arrangement, so that the tubs loaded with sandstone descending the shaft draw up the empty tubs. It is not always the case that the levels are driven first from which the opening out of the chambers is commenced. Sometimes the excavations are first commenced from the bottom of "passes" sunk in the deposit close to the lying wall. These passes are generally used for introducing the sandstone packing from the level above into the chambers, the passes are, however, packed tight as the packing is built up. In order to keep a road round to the hanging side of the excavation a single arch, reaching from the floor to 6 ft. or 7 ft. in height, is built on each side of the chamber, the tops of the arches resting against the solid pillars of ore on both sides of the chamber. The sandstone packing is built over the arches, which thus afford access to the hanging side of the chamber during its excavation, since the deposit will have been taken down to some height at the lying side over the level long before the excavation has reached the hanging side of the deposit. The mineral is introduced to the level through an elliptical shaped shaft, built vertically upwards in the packing, being set off slightly to the lying side of the level. As the shaft is carried vertically upwards it recedes from the lying wall of the deposit, which, since the deposit dips at an average of 45°, gives 1 ft. horizontal remove from the lying side for each 1 ft. increase in height of the packing, so that when the excavation has reached the next level above the top of the shaft will be 66 ft. from the level, which is formed at a distance of 2 yards from the lying wall of the deposit, and it becomes necessary to start a second shaft close to the level as the excavation of the chamber is carried up-

wards for the second height of 22 yards. As the excavation of the chamber approaches completion it is necessary to be very careful to avoid the breaking through of the thin rib of the deposit, on which rests the packing in the chamber above. This portion is generally supported by building solid pillars, from 5 to 7 yards square, to the roof of the chamber. As the whole of the deposit is valuable, this last portion is worked out, the packing above being supported by spilling timbering. When the chamber above happens to be one worked out a considerable time ago, when the mineral was got chiefly by fire setting, the packing appears somewhat cemented together, and breaks down after standing first for two or three weeks unsupported. When the roof gives way the miners must be withdrawn until everything has settled, when the ore is picked out as well as possible from the debris.

In the second modification of the chamber workings the general method is very similar to that described as practised at Rammelsberg, the mineral remaining on the floor of the chamber until the excavation of the chamber is completed, when it is conveyed down shafts built in the broken ore to the levels below. The whole of the mineral is not got, a thickness of some few feet being left to form the roof, the under side being left arched. These ribs give way eventually, and the ground breaks in up to the surface.

The third modification is usually practised in working out salt deposits, since the intrinsic value of the mineral is insufficient to cover the expense of introducing packing material with which to fill the large empty chambers, and so avoid the breaking down of the ground to any great extent. This third modification often resembles bell pit workings, differing chiefly from the latter in the enormous size of the chambers. A good example of this third modification is furnished by the workings of the salt deposits in Transylvania. The deposit is upwards of 150 yards thick, and is covered in some places only with a layer of salty clay and sandstone about 40 yards in thickness. The deposit is reached by a couple of shafts sunk close together, the one fitted up as a travelling shaft, and the other as a winding shaft. The shafts are continued down 14 yards in the deposit, this thickness being intended to be left up as a roof. At this depth a level 40 ft. wide and 8 ft. in height is driven in the direction which it is intended the chamber shall be longest, and for a length of 100 yards in each direction, so that the chamber is upwards of 200 yards in length. When the level has attained these dimensions the floor is excavated by under-stopping, the narrower ends being carried down vertically, the longer side being sloped, so that the width is gradually enlarged from 40 ft. to 50 ft. or 80 ft., when the longer sides are carried down vertically. The chamber is not carried to the full depth of the deposit, several yards in thickness being left to avoid any disturbance of the ground below from which water might gain access to the workings. When one chamber has thus been worked out a second is commenced at a distance of 90 ft. to 120 ft. to the side, so that a wall or pillar 40 ft. thick remains between the chambers, which are left untouched. These pillars eventually give way, resulting in great fallings in of the ground up to the surface; these are so dangerous in their character that the surface is raised over those portions of the ground which are expected sooner or later to give way. It has been found advantageous to reduce the size of the chambers and pillars so as to form several smaller chambers in the place of one large one, the salt being found to spoil when it is exposed too long, and the resulting breaking in of the ground are smaller, taking place often at more regular intervals. The chambers, however, cannot be made too small without increasing the cost of getting.

## FOREIGN MINES.

PLACERVILLE.—J. Thomas, Dec. 13: During the past two weeks the winze from fourth level has been sunk 7 ft., making a total depth of 82 ft. Opening out stopes in second level.

ANTIOQUIA (FRONTINO).—The statement of profit and loss for the month of October shows a loss of 1622.0s. 6d. In addition to the cost of 2426.3s., the sum of 1601. was spent on capital account.

FRONTINO AND BOLIVIA.—The statement of profit and loss for September month shows a profit of 1474.19s. In addition to the cost of 2426.3s., the sum of 8834. was spent on capital account. For October month the accounts show a profit of 792. In addition to the cost of 3518.16s., the sum of 6644.15s. was spent on capital account. The reports which accompany the accounts show that the mines are progressing in every way satisfactorily. Mr. White states that but for a temporary interruption in driving the 43 north in the Silencio Mine, the remittance for the month of October would have surpassed any which has ever been made from the mines.

BIRDEYE CREEK.—J. S. Goodwin, Dec. 13: For several days past I have been able to wash eight hours per day only, but as we have a heavy storm at hand I think we shall be able to wash full time in the course of 48 hours.

BLUE TENT.—G. S. Powers, Dec. 6: As you will see by the water account we are washing and using all available water. We are getting a good supply from our ditch, and hope for a continuance of the same. Nothing further to report.

DON PEDRO.—Copy of telegram dated Rio, Jan. 5, received Jan. 6: The choko is cleared above 50 cross-cuts. Samples generally good. Better produce may not be expected; must depend upon 50-ft. wind.

—Mr. Dawson writes under date Dec. 10: I avail myself of this day's mail to advise that good progress is being made in getting down to the bottom of the mine—the rich ore ground said to have been left between the 40 and the 50 fm. levels. I went yesterday all through the workings, and was able to go a considerable distance along the 50, the timber work in which appears to be in very fair order. As you may suppose, the level is full of sand, which is being cleared as fast as circumstances will admit. It is necessary to use a dry process, as the level is very wet, and the sand has to be wheeled back to the No. 1 incline, from whence it is taken to the surface by means of tram wagons. As soon as we reach the point where the No. 8 lode was intersected in this level an attempt will be made by boring to let down the water now standing in the stopes above, and this we hope to effect in a week or ten days, and as soon as this has been done No. 2 incline shaft can be cleared of the sand which is now choking up the shaft between the 40 and the stopes below. The work of clearing this sand ought not to be a very long affair, as there is a double line of rails in the incline (No. 2), and the wagons will be able to follow the work down, and thus facilitate the clearing of the shaft.—No. 6 Lode: Good progress is also being made in driving the level towards this lode. The level runs south from the No. 2 incline shaft at the horizon of the 40. About 8 fms. to drive before the lode is reached, and it is expected that both lodes—Nos. 8 and No. 6—will be reached about the same time, the end of December or early in January. All here confidently hope that we shall soon be hauling a considerable quantity of good ore.

ISABELLE (Gold and Silver).—Foreman's report for the month of November: "Total distance from Monument to face of tunnel, 1423 ft.; advance for the month, 180 ft. in tunnel; advance in side drift, 43 ft.; total, 223 ft. The rock has been for the most of the month good for drilling and blasting. We were delayed five shifts putting in an air-pipe, and also some delay caused by our water supply ditch freezing, and afterwards a rain storm causing a freshet, washing debris down from the gulches. We had also to break in an entire new shift of drill-men. The work at date is progressing favourably, and machinery all running smoothly."

The manager writes, Dec. 5: "I had a small stringer of quartz in the tunnel yesterday that assayed \$13 gold. No silver."

—The foreman's report for the week ended Dec. 6, 1879: Total distance from Monument to face of tunnel, 1451 ft.; advance for the week, 32 ft.; advance in side drift, 12 ft.; widening side drift, 13 ft. The rock has been medium; good blasting and drilling. Machinery all running smoothly.

PESTARENA UNITED (Gold).—Dec. 20: Pestarena District: The lodes in the 55 north under Aquavite, 80 fm. north, and 33 fm. north Aquavite, have fallen off a little, but as changes are frequent here, little importance is attached to this. In the 65 at No. 5 lode the quartz in side has been cut through, and pyrites found beyond; driving will now be commenced south, a new lode appearing to make in that direction, on which it is hoped something of value will be discovered. The lodes in the two bottom ends yield well, and good ground is being opened there. All other points remain unchanged. Weather is very severe, and only light mills can be kept at work, so that returns must be small. Dressing ore for mill working is also carried on with great difficulty, although a large fire-place, with pipes carried over the picking tables, has been put up.—Val Toppa District: Zero level on counter lode shows a few strings of quartz now. Intermediate on Marmo Rosso also looks a little better, having more quartz with pyrites. No. 1 level on west lode has improved into a good lode. No. 5 level shows a favourable change in the appearance of ground, and as the ore dips from upper levels should come in about here it is hoped the end is getting into it. All the other levels driving continue poor. The stopes yield much as usual, but those on west lode at No. 1 level, and on flat lode at No. 2 and intermediate under, have improved. Owing to severe frosts dry picking the ore has had to be adopted here, which will possibly render the stuff sent down of lower grade. At the mills work is carried on with tolerable regularity, but a staff has to be kept breaking up the ice that accumulates daily around the wheels and water-courses, and the stamps have had to be shut down.

—Jan. 5: Val Toppa District: The end south at Zero level, on the counter lode, continues to yield, at the present time, a little quartz, but it has no value. The lode in the end south at Intermediate level, on Marmo Rosso lode, looks well, although it remains small, yields 3 tons of ore per fathom; worth 10 dwt. per ton. The lode in the end south at Intermediate level, on west lode, is sterile, and shows no signs of change. The lode in the end south at No. 1 level, on Marmo Rosso, being poor, and apparently beyond the ore line, is suspended for the present. The lode in the end south at No. 1 level, on west lode, has improved, it being larger and more consolidated; yields 14 tons per fathom, worth 7 dwt. per ton. The lode in the end south, on Great Quartz lode at No. 2 level, has become poor and unpromising. The lode in the end south at No. 2 level, on flat lode, yields nothing of value, but shows a favourable change. The lode in the end south at No. 2 level, on flat lode, yields 10 tons per fathom; worth 7 dwt. per ton. The quartz widening out, to work with economy, the ground will be stoped. The lode in the end south at Intermediate of Nos. 1 and 2, on flat lode, yields 6 tons per fathom; worth 8 dwt. per ton. It increases in size in going forward, and appears to be a separate branch from the regular flat lode. The end north at No. 3 level, on west lode, shows a branch of quartz

\* Being Notes on a Course of Lectures on Mining, delivered by Herr Berggrath, Dr. von Groddeck, Director of the Royal Bergakademie, Clausthal, The Hartz, North Germany.



coming in. The end south at No. 3 level, on middle branch, is started to prove a perpendicular vein between the flat and great quartz lodes. The lode in the end south at No. 3 level, on Great Quartz lode, continues poor and unproductive. The end south at No. 5 level, on west lode, has small veins of quartz, with streams of water, but no regular lode. The seven pits have closed the working of the stamps, the returns for the past month are low.

**Pestarena District:** The 33 end north, on No. 1 lode, is still unproductive, but shows signs of change. The 55 end north, on No. 1 lode, continues to look very promising, and yields 3 tons of ore per fathom. In the winze on No. 1 lode, below the 55, there is a good lode, 1 metre wide, composed of quartz, schist, and pyrites, and yielding 8 tons of ore per fathom. The lode in the 80 end north, on No. 1 lode, has fallen off in value, not giving so much pyrites; now yielding on No. 1 lode, 3½ tons of ore per fathom. The lode in the 100 end north, on No. 1 lode, is not looking quite so well, yielding 2 tons of ore per fathom; but it is expected to improve again. The 100 end north, on No. 1 lode, continues unproductive. The winze under the 100 north is intended for a tip-fathom; to open with a shoot into back of incline. The lode in the 110 end north, on No. 1 lode, has decreased in size, but in two branches of quartz, 1 metre end south, on No. 1 lode, shows a good lode in 2 tons of ore per fathom. The wide, well charged with pyrites, and yielding 10 tons of ore per fathom. The 65 end north, on No. 5 lode, yields 12 tons of ore, and has a large lode of quartz, with strings and spots of rich pyrites throughout. The 65 branch in the end south, on west branch of No. 5 lode, has become small, and it is feared it will cut out; yielding at present 2 tons of ore per fathom. Acquavite Mine: The lode in the 33 end north, on No. 1 lode, continues much the same for some time past. Driving is suspended for the present, but the men in the winzes. The cross-cut west in the 46 is also suspended for the same reason. Only eight mills have been worked during the past month, the frost having diminished the quantity of water.

Returns for December: Pestarena, 220 ozs. 3 dwts. 4 grs., from 180 tons of ore; yield per ton, 1 oz. 3 dwts. 17½ grs. Val Toppa, 149 ozs. 12 dwts. 12 grs., from 424 tons of ore; yield per ton, 6 dwts. 21½ grs. Total, 369 ozs. 15 dwts. 16 grs., from 604 tons; average yield, 12 dwts. 6 grs. per ton.

[For remainder of Foreign Mines see this day's Supplement.]

### THE ALMADA AND TIRITO CONSOLIDATED SILVER MINING COMPANY (LIMITED).

**Dios Padre.**—Capt. N. C. Morcom, Oct. 20: The lode in the end driving north is small and poor at present. The stopes in the back and bottom of the No. 1 level have fallen off both in quality and quantity. The past three months have been very fairly productive of good green ore at this point, the lode being pretty productive. No doubt we shall meet with further productive ground as the end is advanced north.

**Nov. 3:** The lode in the end driving north is small, and of no value at present. The stopes in the bottom of the level have fallen off in value of late; it is now suspended, and being filled up with debris in order to enable us to carry on the stopes in the back of the level, where the lode is moderately productive.

**Nov. 17:** There has been no change taken place at this point worthy of notice since our last report.

**Mina Grande.**—Oct. 20: The end driving north in the black ore stopes below tunnel level has been usual—very productive of black ore. As before indicated, the object of the late drive was to hole to the old Almada winze; this is now accomplished, and the men who were driving the end are put to stop the back. The stopes are yielding very well, and will continue to do so here until the bottom of the tunnel is reached. The horse-whim is working very satisfactorily. The stuff in the 12 will be cleared in a few days, when active operations will be again resumed both in the 12 and 15.

**Nov. 3:** All operations have been suspended in the big black ore stopes during the past week while the excavation is being refilled with debris. The boiler has been repaired, the engine started again, and the water drawn out of the 12 and 15. Driving and stoping in both levels will be commenced without delay. We hope henceforth to be able to draw the water with the horse-whim, and thereby effect a considerable saving in the cost of fuel.

**Nov. 17:** The 12 north is now being driven. The course of the level will be more to the west than formerly, as the ore appears to be making in that direction. A stopes has been started in the back of the level north of the winze, just completed from the black ore stopes; it is looking well at present. We have also begun to stop the bottom of the 15 from the winze already sunk. We anticipate getting a good deal of metal of very fair ley from this stopes. The black ore stopes below tunnel level is yielding large quantities of metal, as it is wont to do. There will not much change take place here while the ground lasts.

**LA VIRGEN.**—Oct. 20: The lode is again making a change from green ore to black; this you are quite aware frequently takes place. We would prefer that the green continued, as it would supply us with ore for the patio. The lode has been yielding some good ore of late—i.e., above tunnel level. The stopes in the 10 are rather poor at present, and the ground hard and expensive to excavate. The footway winze sinking below the 10 is still productive of good black ore; we have opened out of late a good deal of ground in this level on the Virgin branch, as some parts of the lode have been of good quality, while other parts have been rather poor. No doubt the ground opened will pay the expense of excavation, but probably leave no profit on the working unless a better lode be met with in stoping, which is by no means improbable.

**Nov. 3:** This stopes situated above tunnel level has been very regular in productivity for a long time past. There is no point in the mine that has the appearance of durability above this old stopes except the Gravitado. To what height the ore will make up it is in no one's power to say; we hope it will be considerable; 80 ft. is the present height above the back of the tunnel. The stopes in the back of the 10 are yielding ore in paying quantities. The end driving south below the 10 towards the arch of ground north of the Tirito engine-shaft is in a productive lode.

**Nov. 17:** There has been nothing doing in these stopes during the past two weeks, as we have to fill up the excavation, and no labourers to do it with. We hope, however, to get it done by the end of the week, when stoping will be at once resumed. The ends driving on this branch in the 10 are still in productive ground.

**LA PROVIDENCIA.**—Oct. 20: The lode in the big green ore stopes is not so large as formerly. The old workmen are gaining on us a little at the south end—the old Purisima workings. We have now reached a height of 90 ft. above tunnel level. We hope we have still a considerable quantity of ground yet standing, and that the present yield will not fall off.

**Nov. 3:** There has been no material change taken place in this stopes of late, with the exception that it is diminishing in length and width.

**Nov. 17:** The old stopes continues much as usual, with perhaps a slight change for the better.

**TIRITO.**—Oct. 20: The end driving north of the new winze, and also north of the arch between the 10 and the 20, has become poor. The lode is probably thrown to the east. We do not think it wise just at present to cross-cut for it, as we shall shortly be driving south of the footway winze to meet this point, which will indicate plainly the course the lode has taken, and save the expense of a cross-cut. There are 35 ft. between the end and the footway winze. The rise in the back of the 20 is suspended until made secure by filling with debris. This might be more properly called a stopes, as we rise several feet, then start a stopes from the end of the rise.

**Nov. 3:** The stopes in the arch of ground between the 10 and the 20 has given ore in fair quantities during the past two weeks; at present the level is mixed with considerable gangue.

**Nov. 17:** Stopping the arch of ground below the 10 is suspended until we communicate it by the end driving south of the footway winze, where a supply of debris will be obtained for filling up the ground excavated. We have already taken from the arch a great many tons of fine black ore. It will probably take three weeks longer to hole to the arch from the level driving south.

**SAN PEDRO.**—Oct. 30: There has been but little done in this ore stopes since last reported, it being in a rather dangerous state, and had to be put in a safe position for working; operations are again resumed; a rise in the back and the stoping continued. The stopes is still yielding fairly.

**Nov. 3:** No change has taken place in this stopes worthy of notice since last reported. Good green ore is still being extracted.

**Nov. 17:** The stopes has become much shorter, and is poorer in the back than for some time past. Notwithstanding this, good green ore is still being met with. We shall shortly have to rise for another stopes, which will give us some idea as to the future of this point.

**EXPLORATION.**—Nov. 17: We are putting up a rise in the back of tunnel level on the course of the lode, north of the Virgen lode, or, rather, north of the present Virgen workings. The result thus far has not been very encouraging. Some good stones of green ore are met with occasionally.

**TRIBUTES.**—The tribute department remains much as usual.

**J. H. Clemes (Underground), Nov. 8:** The 12 workings have not sent out much ore, the stopes not yet being in good working shape. At the big stopes not much progress has been made in filling up. Underground as well as at surface labour is still scarce on account of feasts. We fear that the San Pedro bunch will be exhausted within a short period. The Tirito arch has produced a very copious petanque and black ore; these will be crushed together with good Petanque petanque, and shipped, probably, next week. We expect a fair assay result. The green ores from Providencia main ore chamber still show specks of petanque. The output has somewhat diminished, the stoping area having contracted. The ore from the Cruz Verde (Mina Grande) was this week of somewhat better grade. The directors have received the following telegrams from Mr. Clemes since November 6:

Nov. 15: "The shaft furnace was put in blast this day."

Nov. 16: "The silver assay of this matter in ounces per ton of 2000 lbs. is 107."

Nov. 23: "150 quintals of black ore (15,000 lbs.) passed through shaft furnace after a rough burning in open stalls or kilns per day. The shaft furnace works smoothly with ore in powder—very smoothly with stone."

Dec. 4: "The shaft furnace works smoothly—very. The result of the preliminary trial was so good that we are setting aside black ore for a larger smelt—very. The assay for silver of the pig-lead is 270 ozs. per ton."

Dec. 19: "Mina Grande ore in 12 ft. (level) more copious. Ley of ores good. Looking well. Width of Mina Grande lode 20 ft. Petanque ore in stock, 5 tons."

**COLORADO UNITED.**—We copy the following paragraph from the Georgetown Courier of Dec. 11:—"The Silver Ore shaft on the Terrible will be deep enough by the end of the year so that two new levels can be started, the tenth and eleventh. The lower workings show excellently, and at no previous time in the mine's history has there been as much ore in sight as at present. When the tenth and eleventh levels are extended to the Terrible shaft it is probable that the ore reserves in this mine will be as good as in any mine in the State. When Mr. Hamill took charge of the property, the first of this year, there were no ore reserves worth mentioning, and the mine was largely in debt, and the change that has been wrought can be attributed solely to the manner in which the property has been managed. It is a lesson that many eastern corporations can study with advantage."

### FOR SALE.

#### IRON MINES IN SPAIN.

A NUMBER of IRON ORE MINES, extending over an area of about one square mile, and situated in one of the RICHEST MINERAL DISTRICTS of SPAIN, is OFFERED FOR SALE. The mines possess the great advantage of a railway running through them, direct to the mole of one of the principal shipping ports of the West Coast of Spain.

As the vendors are not prepared to undertake the working of the mines themselves, they would DISPOSE OF THEM on very moderate terms.

For further particulars apply by letter, addressed "Pax," MINING JOURNAL Office, 26, Fleet-street, London.

A RETIRED MERCHANT, with great experience in Mines, will ADVISE AND ACT FOR INVESTORS. A SELECTED LIST sent on application. Address, "M. N. 97," Messrs. Deacon, 154, Leadenhall-street, E.C.

FOR SALE, a FIRST-CLASS SECOND-HAND 80 in. CORNISH PUMPING ENGINE, with several 11 ton BOILERS. Apply, Wm. BENNETTS, Roskear, Camborne.

### NOTICE.

THE REGISTERED OFFICES of the following COMPANIES are at Nos. 9 and 10, CAMBRIDGE CHAMBERS, LORD STREET, LIVERPOOL:—

THE PRINCE PATRICK LEAD MINING COMPANY (LIMITED).  
THE VICTOR LEAD MINING COMPANY (LIMITED).  
THE CENTRAL FOXDALE SILVER-LEAD MINING COMPANY (LIMITED).

All communications relative to these companies should be sent to the Registered Offices, as above. THOS. HUGHES, Secretary.

### J. S. MERRY,

ASSAYER AND ANALYTICAL CHEMIST

SWANSEA

SUPPLIES ASSAY OFFICE REQUIREMENTS AND RE-AGENTS.

**THE AMERICAN IRON TRADE.**—The market for pig-iron continues to gather in strength every day, and, even at the advanced prices, nearly every company declines to sell, even to the regular customers, except in small lots. The Lehigh Company reports that two-thirds of its entire yield for 1880 is already sold. At Philadelphia, the rise since last week has been from \$1 to \$2 per ton, and, in fact, orders are placed pretty much on whatever terms sellers choose to name. Scotch iron is rather quiet; there has been a good business done in North of England iron, which has participated, to a certain extent, in the rise. All the various mills are full of work and orders, and the cost of steel rails has very nearly doubled within the last eight months. An early advance is also expected in iron rails. The amount of business done at Pittsburgh in pig-iron, considering that it is Christmas time, is something extraordinary. This is partly owing to the increased cost of foreign importations, the advanced price of which on the English side has caused a reaction in the American market and made it much stronger. The production, too, for the next few months will be restricted from the scarcity of ore, which will not be removed until after the opening of the lake navigation, so that the makers have little to fear from a decrease in consumption. Manufactured iron has rapidly gone up, and steel rails are quoted at \$5 per ton more than they were a month ago. At Chattanooga the market is not so excited, though pig-iron has advanced between \$1 and \$2. At Boston the market is quiet, but firm, Scotch iron arriving freely and finding a ready sale in the West. At Cincinnati the demand is greater than has ever been known at this season of the year. At St. Louis there have been sales of 10,000 to 15,000 tons of pig-iron at an advance of from \$3 to \$5 per ton. At Baltimore all kinds of iron are reported very active, and at Louisville the market is greatly excited.

**BWLOH UNITED MINES.**—The weather being more favourable, an increased force has been put to work, and all the underground and surface operations are being proceeded with vigorously. The same will be continued with all speed, the capital for this object being subscribed.

**LLANRWST.**—We are pleased to learn that the directors of this mine have decided upon resuming sales of lead. Orders have been issued to the manager to put the mine in full work and lose no time in returning ore to market. Capt. Knapp states that he can commence returning 60 tons of lead per month, and as soon as Edeane's shaft is sunk a few fathoms deeper the output can be increased to 100 tons monthly. At the present price of lead the company will be enabled to make good profits.

**REVIVAL IN THE DURHAM COKE AND MINERAL TRADES.**—Messrs. Bell Brothers have instructed their men at the Tursdale Colliery, Durham, to re-light 47 coke ovens. These, with those already burning, will give employment to about 400 hands. At Trimdon Grange over 400 miners are working night and day, and at Trimdon Chilton collieries double shifts are being worked, and fresh men are being set on every day. Tudhoe Grange Ironworks are going full time, and puddlers are being fast re-engaged. Good orders for limestone have been received at the Mainsforth and Rosedale quarries.

**NEW MEXICAN MINES.**—The States of Nuevo León, Coahuila, and Durango, in Mexico, have recently been invaded by an army of miners from Texas and other parts of the United States and of Central America, attracted thither by the reports of the discovery of new gold mines of fabulous wealth. The mines are situated in the Sierra Mojada, and, having been carefully examined by an engineer and mineralogist appointed by the Mexican authorities, are stated to be of incalculable value.

**THE GOLD FIELDS OF GEORGIA, UNITED STATES.**—A despatch from Atlanta to the New York World says that there has been a largely increased development in the gold fields of Georgia. From a bullion yield of only \$100,000 four years ago, the product this year promises to exceed \$1,000,000, and is rapidly increasing. These mining operations extend from the counties of Oglethorpe and Wilkes to the Alabama line.

**MINING IN NEW CALEDONIA.**—A French company has been formed, with a nominal capital of 1,920,000*fr.*, for working the nickel and cobalt mines of Bel-air, in New Caledonia. The copper mine of Ballade produces nearly 1000 tons of ore per month, which is all forwarded to Newcastle (New South Wales). The gold mine of Galatino is being worked vigorously, and is said to be of great richness. A new branch of mining industry has lately been opened up in the Chesterfield guano deposits, which are being worked by experienced men, and are said to equal in wealth any similar deposits in the southern hemisphere. 300 tons of chromate of iron were recently dispatched to Bordeaux on board of the Saint Marc as an experiment, and it is expected that a considerable trade may grow up in this product, as it is believed to contain an unusually large percentage of oxide of chrome.

**ATMOSPHERIC PRESSURE APPLIED IN RAISING COAL.**—The history of atmospheric railways is, on the whole, a record of failure, and it would appear that the system can hardly compete with that of the locomotive engine unless in very exceptional circumstances. Their principle, however, seems to have been applied recently with success to the raising of coal at one of the coal-pits of Epinae, in France, named the Hottenguen pit, by M. Blanchet, engineer. His system is described in the Annales des Mines, and its principal organ is a metallic tube freely suspended in the shaft, like a pump column, and containing an upper and a lower piston, rigidly connected, with an intermediate cage holding a vertical series or train of trucks nine in number. The tube communicates below with the atmosphere, taking in air or letting it escape, while above it is connected with an air-pump, but can also be made to communicate with exterior air by means of orifices which can be opened or closed at will. When the train is to ascend the air is exhausted above, and free air entering below forces the cage up. Descent is effected by admitting air above, that which has entered below being then forced out. Doors, tappets, registers, stopcocks, &c., are provided so that the empty or full wagons can be introduced or withdrawn as required. There are also barometers, bells, counters, and chronometers indicating where the train is, either in ascent or descent. The system may be applied with two

tubes instead of one. In this case the tubes are connected, and a full train rises in one, while an empty train descends in the other; air passes constantly above from one tube to the other. The velocity is mathematically regulated by the volume of air admitted above the piston in descent and by that withdrawn in ascent. According as the air which forces the train up is drawn from a fresh or a warm current, it is driven into the pit or out of it by the descending train. With these general features a special advantage of the system should be noted. By means of the powerful air-pump such depression can be produced in the pit, closed in the absence of the workmen, that the fire-damp is dislodged from the spaces where it lurks, and the vitiated air is then replaced with fresh. Though this greatly reduces the danger from fire-damp, the usual precautions are attended to. This atmospheric system is stated by M. Blanchet to realise an economy of 70 kilogs. of coal per ton raised, and consequently of some 315 *frs.* for a daily extraction of 450 tons. In the year, counting 280 working days, this gives a total economy of 88,200 *frs.*, without counting that resulting from suppression of cables.

**ARTIFICIAL DIAMONDS.**—Dr. Percy writes to the Times:—"I agree with Mr. Maskelyne in thinking there is reason to expect that the diamond will some day be artificially produced. But, if so, possibly a very long period will be required to form a crystal of sufficient size and quality to be of any commercial value. Alumina, the substance of sapphire and ruby, has long ago been crystallised, yet to this day no artificial sapphire or ruby worth a farthing has appeared in the market. The balas ruby, or red spinel, was formed about 40 years ago by Ebelmen in small but distinct crystals, of which I have specimens in my collection, yet, as far as I am aware, the natural gem is alone known to jewellers. The conditions under which nature has crystallised carbon in the cubical system must be extraordinarily rare, seeing that a small room would probably suffice to contain all the diamonds that have hitherto been discovered. The possessors of diamonds have not at present any reason to fear that the value of their property will be lowered by the crystallised carbon of the chemical laboratory."

**DOIDGE'S ILLUSTRATED ALMANACK FOR 1880.**—Mr. J. S. Doidge's Almanack for 1880 is, as usual, full of interesting local and general information. As a small, handy, reliable work of reference for gardeners, those interested in seafaring occupations in Cornwall, and mining men in and out of Cornwall, it cannot be too highly commended, containing as it does local tide-tables, gardeners' and farmers' calendars, list of mine pays, copper ore ticketings, and all the classes in connection with the Miners' Association, from St. Agnes and Truro to St. Just, with the names of teachers, with a mass of useful local postal information, times of conveyances leaving various places, good original tales, places of worship and times of service, &c. To the readers of the *Mining Journal*, the list of mine pays, copper ore ticketings, and Miners' association classes will specially commend themselves, these being worth more than three times the price of the book.

**THE KURILE ISLANDS—FORM OF VOLCANOS.**—Two interesting memoirs by Prof. John Milne, F.G.S., of the Imperial College of Engineering, Yeddo, Japan, have just been reprinted in pamphlet form (London: Trübner and Co., Ludgate Hill), and will be found to contain much valuable information corrective of views previously entertained. He finds that to describe volcanoes as conical only indicates a general form, the true form of the slopes being approximately logarithmic. The Kuriles appear to afford an unusually good opportunity for observations of this kind, for the volcanoes are altogether recent, and from what Prof. Milne saw sedimentary rocks are as yet without existence. In the Kuriles the greater number of the more important mountains show a well-defined form; their sides are covered with ashes, and they show those slopes which indicate they have suffered but little since they were first built up. He thinks that if it were possible for us to determine with certainty the reason why the various volcanoes have become extinct we should find that a complication of causes had been in operation, and in no two cases ought we to expect to find agencies which had been anything more than approximately the same. The second paper contains the account of some interesting experiments on the form of heaps, and it appeared that when the falling particles were not uniform the curvatures were produced.

LEAD ORES.				
Date.	Mines.	Tons.	Price per ton.	Purchasers.
Jan. 3.	United Van, &c.	20	£12 3 6	Walker, Parker, & Co.
7.	Llanerchyrvaun	53	13 10 0	Adam Eytton.
8.	Bettws-y-Coed	30	12 11 6	Walker, Parker, & Co.
8.	Talargoch:			
	Maesyrwddu	30	13 12 6	Quirk, Barton, and Co.
	Coetia Llys	10	14 3 6	Walker, Parker, & Co.
	North Hendre	25	13 1 6	Adam Eytton.
	ditto	25	13 1 6	Walker, Parker, & Co.
	ditto	50	13 3 6	ditto
	Prince Patrick	50	13 15 6	ditto
	Gwernymynydd	50	13 8 6	ditto
	Rhydalun	20	13 8 6	ditto
	Victor	103	12 18 6	Adam Eytton.
	True Blue	5	12 16 6	ditto
	Pant-y-Mwyn	25	13 2 6	ditto
	Parrys	6½	13 1 6	Walker, Parker, & Co.
	Van	50	14 3 0	Weston, Son, and Co.
	ditto	50	14 7 0	ditto
	ditto	50	14 11 0	ditto
	ditto	50	14 2 6	Panther Lead Company.
	Tankerville	50	13 3 0	Nevill, Druce, and Co.
	ditto	50	13 1 6	Walker, Parker, & Co.
9.	South Darren	50	18 4 0	Nevill, Druce, and Co.

ROMAN GRAVELS.—This company sold on Dec. 23, 200 tons of Lead for 2655*l.*

BLENDE.				
Date.	Mines.	Tons.	Price per ton.	Purchasers.
Jan. 7.	Talargoch	150	£ 5 16 6	Swansea Vale Company.
—	ditto	150	5 10 0	ditto
8.	Van	37½	4 3 0	ditto
—	ditto	37½	4 3 0	Kenrick and Son.

COPPER.				
Date.	Mine.	Tons.	Price per ton.	Purchasers.
Jan. 9.	South Darren	15	£ 9 18 0	Vivian and Sons.
—	ditto	35	2 18 6	ditto

COPPER ORES.							
Sampled Dec. 23, and sold at Swansea, Jan. 6.							
Mines.	Tons.	Produce.	Price.	Mines.	Tons.	Produce.	Price.
Betts Cove	111	6½	£4 2 6	Virneberg	37	5½	£3 13 6
ditto	111	6½	4 1 6	ditto	30	14½	8 17 6
ditto	111	6½	4 1 6	ditto	23	10½	7 1 6
ditto	111	6½	4 1 6	ditto	30	22½	15 4 6
ditto	110	6½	4 2 6	ditto	21	17½	10 18 0
ditto	110	6½	4 2 0	Caveira	96	9	5 9 0
ditto	110	6½	3 18 0	ditto	95	9	5 6 6
ditto	109	6½	3 19 6	ditto	95	9	5 7 6
Berehaven	73	8	5 3 0	Chili Ore	65	26½	17 17 0
ditto	72	8	5 7 6	ditto	65	26½	17 17 0
ditto	72	8½	5 4 6	Copper Pre.	18	13½	8 5 0
ditto	71	8½	5 6 6	ditto	15	38½	23 19 0
ditto	58	14½	9 15 6	ditto	14	27½	17 8 0
ditto	42	10½	6 13 6	ditto	2	22½	13 18 0
Virneberg	70	12½	7 15 6	ditto	3	55½	37 7 0
ditto	70	12½	7 14 6	Cop. Sludge.	1	18½	11 4 0

TOTAL PRODUCE.					
Betta Cove .....	883	£3581 17 6	Chili Ore .....	130	£2322 2 6
Berehaven .....	388	2371 9 6	Copper Precip. ...	52	891 4 0
Virneberg.....	293	2482 18 0	Copper Sludge ..	1	11 4 0
Caveira .....	286	1539 14 0			

COMPANIES BY WHOM THE ORES WERE PURCHASED.				
Names.				
Copper Miners' Company	378½	£ 1593 15 9		
P. Grenfell and Sons	124	672 12 0		
Nevill, Druce, and Co.	249	1746 2 6		
Vivian and Sons	128	599 10 0		
Williams, Foster, and Co.	538½	4289 4 9		
Mason and Elkington	111	452 6 0		
Charles Lambert	37	125 19 6		
Landore Copper Company	467	3705 18 6		

Total .. 2033 .. £13,200 9 6

TOTALS AND AVERAGES.				
21 cwt. Produce.	Price.	Per unit.	Standard.	
Whole sale .. 2033 .. 10	£6 9 10	12s. 11d.	469 5	



## Mining Correspondence.

## BRITISH MINES.

**BETTS-Y-COED.**—Jan. 8: There is little or no change in the cross-cut north of the 30, west of flat-rod shaft. In the 30, driving east of the shaft, the lode shows continued indications of a speedy improvement. We yesterday cut a vug which has let out a considerable quantity of water, and there is more lead in the lode. We have put six men in this end, in order to push on as fast as possible. The deep adit level driving east is about the same as last reported. The slopes are without alteration. We have ample surface water. The 30 tons of lead ore (computed) sold yesterday to Adam Eyton, Esq., made 127. 11s. 6d. per ton; it is being carted to the station.

**BLAEN CAELAN UNITED.**—Jan. 7: Very little has been done in the winze or in the slopes in the 30 for the week, owing to the men being engaged putting in the new pitwork. This is now completed, and I hope to have the mine in fork and work resumed on Dec. 9. The slope in back of the 20 has improved, and is now producing some excellent leadstuff. In accordance with instructions, I have put men to continue the cross-cut to the south or great Esgair-lir lode. I hope to have a good sampling of ore ready by the end of the month.

**BLUE HILLS.**—S. Bennetts, Stephen Davey, Jan. 3: The lode in the 40 east end is gradually becoming more promising in appearance, is wider, and containing some fair quality tinstuff, and the ground not quite so stiff. The west end is still poor. The 30 east end contains a lode worth 25s. per fathom, and a rise above, this level is worth 15s. per fathom. In the tribute department there is not much change to notice.

**BODDRIS.**—J. H. Hutchins, Jan. 7: Our underground operations are being pushed forward with all energy. The 60 east, on Maes-y-Pwll lode, is daily improving in appearance, and is to-day showing lead ore in the roof of the present forebreast; this end is now very near the ore ground seen in the levels above; this being the case I am daily expecting substantial improvement here. No change in the other workings on this lode calling for remark; the ore in each place is much the same as last week. The dressing of ore is now progressing regularly, and we are also busy fixing machinery, &c., at Meadow shaft, the engine being already in its place.

**CLEMENNYA.**—J. Roberts, W. Sandoe, Jan. 7: During a part of the month the severe frost dried up the water, which prevented our doing anything at the road-side shaft except making a deep conduit level with the one which passes under the road, which enables us to do away with the top pump of the lift, and the water is now delivered 9 ft. deeper. Since the frost has broken up and the rain came on we have set the pumps to work, and we hope the water will be out again in a few days. For a great part of the month the north end men at the 34 ft. level have been stopping in the roof of that level owing to the end being filled with stuff. We find still a nice lode in the roof, and we think best to continue rising till we get a communication with the old sump in the bottom of the 15 ft. level; this, we believe, will open a good section of stopping ground, and if we put the stopmen that are at the 25 to sink down to meet them it will hasten the communication, and they will be better employed than where they are now. In the south end we have not done much for the same reason, as not having done much in the north. Now the end is clear of stuff we shall resume driving; the ground seems to be changing for the better, and we expect soon an improvement in the lode. The slopes at the 25 are not so good, for that reason we purpose putting the men to sink at the 15, as aforesaid. The end driving west at the 25 is very much the same as yet. There is a nice rib of lead in the end, but it does not seem to be far enough off from the other lode to be properly settled. At surface we have nearly completed the walls of a new dry or changing room for the men, and the dressing is going forward as fast as we can push it.

**COMBARTIN.**—T. Harris, T. Comer, Jan. 8: The lode in the north-west adit end is large and strong, carrying veins of foolcan and friable quartz, in which we find small patches of good lead and blende, a very kindly lode, and contains most encouraging features for early improvement. In the 17 north-west we have intersected Harris's cross-course, which has thrown the lode out of its course. We are now driving north on the west side of the cross-course to meet with the western portion of the lode, which we hope to find in a few days. The lode in the 17 south-east is showing good stones of lead and blende, much the same as when we last reported.

**DENBIGHSHIRE CONSOLIDATED.**—R. Prince, A. Francis, Jan. 8: The 112 east, main lode, has now a greater width than that announced in my previous report, and judging from the character of the ground I expect a still further improvement very shortly. The 66 west continues to yield splendid lead ore, both in the sinking and the rise in the roof of level. We shall further increase the force, as bargains already made yield good profit. We are very busy dressing.

**DERESBY CONSOLS.**—J. Roberts, W. Sandoe, Jan. 7: We are continuing the points named in our last report, but as yet we have not driven enough to say much about them. There is very nice soft quartz in one of the branches, and a large stream of water issuing from one of the ends. We are getting tools, &c., ready for the men starting the places you advised us on the Red lode and Gorse heading.

**DERESBY MOUNTAIN.**—J. Roberts, W. Sandoe, Jan. 7: There is no change to notice since we wrote on the 3rd inst. The sump at the No. 5 and the slope are very much the same as then. We have not cut through any more of the lode to the west, and, therefore, cannot say how wide the lode is. We are arranging for sinking the Gorse shaft, and shall commence directly unless you advise us to the contrary, and in order to get it done as cheaply and as quickly as possible we purpose tendering for 15 fms. The dressing is going on regularly, and we are working up all the time.

**DUBBY SYKE.**—Wm. Vipond, Jan. 3: There is no material change in the shaft to report; still sinking in the winz. The vein or branch going down is about as it has generally been. Sunk this morning, by 12 men, 1 fm. 4 ft. 4 in.

**EAST CHIVERTON.**—R. Southey, Jan. 8: I am daily expecting to cut the lode in the south cross-cut at the 90, a good deal of quartz is making its appearance in the end, and the water is issuing very freely, so the lode cannot be far off. In stopping the back of the 74 we are breaking some good work for lead. The ground in the 64 cross-cut, south of the engine-shaft, is still hard and spare for driving, but we are pushing it on as fast as possible, and hope to cut the lode soon. The engine and new pitwork is working most satisfactorily.

**EAST FLORIDA.**—The following is an extract from letter, dated Jan. 5, from D. L. Lloyd (local purser) to Capt. John Williams (the manager):—"The adit level has been finished and done very well: we have cut a little with the pick in the adit, where there were some flashes of lead, and the joints seem to widen with white spar, a nice bluestone, and small specks of lead—a mixture. I would drive on this and see what it will prove, it is now about 2 in. wide. We have two lodes open on surface."

**EAST LONGSTONE.**—H. Harris, Jan. 7: The men are driving with all speed towards the east and west lode. Water is coming in, which shows we are nearing the lode. More branches of silver gossan are also being intersected.

**EAST ROMAN GRAVELS.**—Arthur Waters, Jan. 8: Boundary engine-shaft is cased and divided, and ladder ways and stages properly fixed to the 97, from which the machine kibble works to adit in good order. The 97 to drive south of shaft, by six men, at 14s. per fathom; lode 4 ft. wide, composed of carbonate of lime, with good stones of lead ore. The 86 to drive south, by four men, at 7s. per fathom and 20s. per ton; lode worth ½ ton lead ore per fathom. Pitch in back of this level south, by two men, at 6s. per ton; worth ½ ton per fathom. The 75 to drive south, by four men, at 6s. per fathom and 20s. per ton; lode worth 1 ton of lead ore per fathom. The stream of water flowing from present forebreast is greater than anything of the kind previously seen south of shaft, and it is to be hoped that it will lead to something good. No. 1 pitch in back of the said level is set to four men, at 80s. per ton; lode worth 1 ton per fathom. No. 2 pitch, to three men, at 100s. per ton; worth 1 ton per fathom. No. 3 pitch south, to two men, at 120s. per ton; worth ½ ton per fathom. Pitch in back of the 63 south, to two men, at 6s. per ton; worth 1 ton lead ore per fathom. Pitch in bottom of the 50 north, to three men, at 100s. per ton; worth 1 ton per fathom. Pitch in bottom of the 50 south, by two men, at 100s. per ton; worth about 1 ton per fathom. Pitch in the bottom of the 48 north, to two men, at 120s. per ton; worth ½ ton per fathom. Pitch in bottom of the 20 south, to two men, at 110s. per ton; worth ½ ton per fathom. The tributers pay 20s. per ton for dressing out of the above prices.

**EAST VAX.**—W. H. Williams, Jan. 8: The driving upon the cross-course is extended 19 fms. The ground in present end has again become very irregular and shale. Set to four men to drive, at 65s. per fathom; this sum to include filling the stuff into ribbles and banking.

**EAST WHEEL LOVELL.**—R. Quentrell, Jan. 7: The lode in Sworgan is looking just the same as last reported; worth about 12s. per fathom for length of shaft. The water-wheel is working very well, and keeping the water easily.

**GAWTON COPPER.**—George Rowe, George Rowe, Jan. 3: The lode in the 117 east is still showing a very kindly appearance, producing very strong arsenical muddle, mixed with copper ore to the amount of 4 tons per fathom. The lode in the 105 east is over 7 ft. wide, producing 5 tons of arsenical muddle, mixed with ore, per fathom. The lode in the slopes in the bottom of the 105, east of winze, is worth 12s. per fathom. No. 2 slope in the bottom of the same level, 105 west of winze, is worth 10s. per fathom. The lode in the slope in the back of the 95 is worth 11s. per fathom.

**GLASGOW CARADON CONSOLS.**—W. Taylor, W. J. Taylor, Jan. 5: Engine-shaft: We are cutting flat at the 102, preparatory to sinking below the level. The new south lode in the 102 is still disordered, but apparently getting near the end of the horse. We think it will soon improve; it is now worth 12s. per fathom, letting out a good deal of water, and of the same kindly appearance. This level east, on north lode, is suspended, and the men put to cut in south. We find the winze coming down from the 90 is on a south part of the lode. This winze is down within 3 or 4 fms. of this level, and worth 8s. per fathom. We want to hole this as soon as possible for ventilation. The 90 west, on north lode, is nearly into the No. 1 winze sunk from the 78; we hope to communicate this shortly, which will cut out the ground for stoping. The lode in the 90 east is poor. The 90 east, on the south lode, is worth 6s. per fm. The winze coming down from above on this lode, some fathoms before this end, is worth 6s. per fathom. No change in the cross-cut south at this level, which we are pushing on to the new south lode. The slopes and pitches throughout the mine are looking just as usual, varying in value from 10s. to 20s. per fathom. We shall sample next week 160 tons of ore (computed), which will be sold on the 22nd inst.

**GLENROY.**—R. Rowe, Jan. 7: The only alteration since my report of the 30th is a further improvement in the lode driving north at the bottom level. We are carrying all the level in the lode, and there is more standing on the west or foot-wall side, which will be proved shortly; we have this week had in the driving a nice mixture of blende, and there is a good deal more promising quartz coming in the end.

**GORSEDD.**—W. Edwards, Jan. 8: We have an improvement in the 60 driving east, and I can value the yield at present at 1 ton of lead per fathom. There is no change at present to call for any comment either at the 70 or 90 east. The tribute pitches continue to look well, and the dressing-floors are in full work.

**GREAT HOLWAY.**—Jan. 8: We shall finish cutting the ground between Roskell's level engine-shaft by Saturday next. The various bargains in Garden shaft have been improved this last week, and we have now a large pile of blende and lead on surface. The machinery continues to work well, and is in excellent condition.

**GREEN HURTH.**—W. Vipond, Jan. 2: Swan's Shaft: I have nothing new to report from this, except that we have had more water to fight with, owing to the sudden thaw, followed by heavy rains for two days. We have put up the trident, and are making the necessary preparations for working it. I expect to

get a trial with it with a horse to-morrow. If this answers I shall put as many men to the shaft as can work in it.—Vipond's Sump: The end of the 30 south from this continues to yield about 1 ton of ore per fathom. It is looking easier for driving—more soft lamp in the end. This has always been an indication of better ore. There is a good deal more ore in the bottom of the level than in the end. We shall continue the north end of the 30 on from where holed, near Robinson's sump with four men. It will yield apparently 2 tons of ore per fm. The other four men I shall put to stoping between the two sumps.

**GREEN HURTH.**—Wm. Vipond, Jan. 7: Monthly Bargains: Swan's Shaft: There is no change to report in this, we have been trying the horses with dressing the water, but I am certain we can do it at less cost with men yet; I expect some new hands for this place to-day. I have set no bargains in this as I hardly see how I can with new men coming and trying experiments with the horses. Sunk last month with six men 3 feet. The south end of the 30, from Vipond's shaft, is still yielding about 1 ton of ore per fathom; soft lamp in the end coming in from the west side, but we cannot turn the level into it all at once. In the north end of the 30, from Robinson's sump, we are breaking more into the east part of the vein, and getting into better ore, but not sufficiently laid open to estimate its value. We see sufficient to know it cannot be less than 5 or 6 tons per fathom; a few more shifts will show us more clearly what it is like. We have begun with the slope between the sumps, where we have started it will yield 2 tons of ore per fathom; we have not begun this where we have the best ore, but where we could begin to work it most conveniently. The south end is set to six men, at 85s. per fathom; driven last month 5 fms. 3 ft. The north end is set to four men, at 100s. per fathom; driven last month 2 fms. 0 ft. 6 in. The slope is set to four men, at 65s. per fathom. The driving from Robinson's sump last month was 6 fms. 4 ft. 6 in. with six men.

**GRIFFIN.**—C. Knebone, Jan. 6: The 15 is now extended 7½ fathoms from the shaft, the last 9 ft. being in a part of the Griffin lode; the ground is slow of progress, producing good stones of lead ore, and letting out water, but the main part of the lode appears to be in front of us, and we are continuing the drive obliquely to intersect it. In No. 1 slope, north of shaft, the arch referred to in my last report will be completed to-day, and stoping then resumed on a lode worth 25 cwt. of lead ore to the fathom. No. 2 slope, south of the shaft, is without change, and worth 20 cwt. of lead ore to the fathom. The intermediate slope has improved, now worth 10 cwt. of lead ore to the fathom. The slopes above the main adit are still being extended east and west across the lode; the west side produces some saving work, and the east side is worth 12 cwt. of lead ore per fathom. The walls of the lode are not seen on either side yet. The new work for the jiggers is progressing fairly. We have received the new laws for the stone-breaker, and the matching piece for the pumps, to throw the water high enough for dressing purposes. We have resumed active operations on the dressing-floors, and another parcel of lead ore will be ready for market shortly.

**HERODSFOT.**—P. Temby, Jan. 5: Setting Report: The shaftmen have not yet completed their last bargain. The lode at the new shaft has been taken down; it is fully 3 ft. wide, a strong, masterly lode, producing good stones of lead ore, and has let down all the water from the 205 for 100 fms. in length. The 205 to drive north by two men, at 75s. per fathom; the lode is 2 ft. wide, producing good saving work for the dressing-floors. The open cavity on the western side of the lode still continues, and is producing rich stones of solid lead ore. No. 1 slope, in the 205, to four men, at 37s. 6d. per fathom; the lode is 4 ft. wide, worth 20 cwt. of ore per fathom. No. 2 slope, to six men, at 40s. per fathom; the lode is 4 ft. wide, worth 15 cwt. of ore per fathom. No. 3 slope, to two men, at 37s. 6d. per fathom; the lode is 2½ ft. wide, worth 12 cwt. of ore per fathom. No. 4 slope, in the bottom of the 190, south of No. 3 winze, to four men, at 35s. per fathom; the lode is 20 in. wide, worth 20 cwt. of ore per fathom. The 190 to drive north by two men and two boys, at 57s. 6d. per fathom; during the past week this end has improved; the lode is now 8 ft. wide, a splendid looking lode, and worth fully 15 cwt. of ore per fathom. Some very fine specimens of ore were broken from this end yesterday. A rise over the 190 to four men, at 100s. per fm.; the lode is 1 ft. wide, with a little lead, but not to value. We have 3 fms. to rise to complete the new shaft to this level on the western part. No. 1 slope, over the 190, to four men, at 32s. 6d. per fathom; the lode is 3 ft. wide, worth 15 cwt. of ore per fathom. No. 2 slope, to two men, at 32s. 6d. per fm.; the lode is 2½ ft. wide, worth 12 cwt. of ore per fathom. A cross-cut to drive west from the 190 south end by two men, at 100s. per fathom; the end is very wet, and I am of opinion that the lode will be found in this direction. The 70 to drive north from the footway, on the lode, by two men, at 50s. per fathom; the lode is 12 in. wide, worth 8 cwt. of very rich silver-lead per fathom. At surface the water has increased, and we are now drawing more than double the quantity of stuff in the same number of hours. Our crushing is still low, but far better than it has been for the past nine weeks. We are doing all we can to get the ore now lying on the floors prepared for market.

**LADYWELL.**—A. Waters, Jan. 8: The lode in the adit level has slightly improved to-day as compared with the state of things last week. There are now two new branches of ore in the forebreast, which I trust will widen out and improve as the end advances. No change in the 20 south.

**LLANRWST.**—R. Knapp, Jan. 8: The engine was set to work to-day, and I presume it will take until the latter end of next week to get all the water out of the mine. We were fortunate in getting suitable engines so promptly, one of whom had to come from Cornwall. I do not expect any let or hindrance in forking, as our pitwork and machinery are in first-class condition. It would not have taken quite as long to get the water out but for the recent heavy floods, which have saturated the ground to a very great depth.

**R. Knapp, Jan. 8:** There is no change to notice in the mine since last week. Most of the men we have at work were engaged in getting things ready to start the engine as quickly as possible. The engine is working well, and satisfactory progress is being made in draining the mine. I hope to have the water out at the flat-rod shaft by Monday next, and commence driving at that time in the 14, towards Endeavour's shaft. As I stated yesterday, it may probably take a week longer to get it out at Endeavour's.

**LOMAX.**—W. Argall, Jan. 7: The men are now engaged securing ground at the mouth of the adit on the Cliff lode. The lode is 3 to 4 ft. wide, and in a little driving we shall get from 20 to 30 fms. of back.

**MELLENEAR COPPER.**—J. Gilbert, Jan. 7: Gundry's Shaft: The 40, west of shaft, was driven last month 4 ft. 6 in.; the lode is 2½ ft. wide, and yielding ½ ton of copper ore per fathom, and some saving work for blende. The 50, going west of cross-cut, on the south-east part of the lode, was driven 1 fm. 3 ft. 6 in.; the lode is 3 ft. wide, and yielding some low quality dressing work for copper ore. The 60, west of shaft, going east on the south-east part of the lode, was driven 2 fms. 2 ft.; the lode is 3 ft. wide, and yielding 1 ton of ore per fathom, and improving in appearance. The 70, west of shaft, going east on the south-east part of the lode, was driven 2 fms. 1 ft. 6 in.; the lode is 5 ft. wide, and yielding 2 tons of ore per fathom. The 70, west of shaft, on the main lode, was driven 4 fms. 0 ft. 6 in.; the lode is 3 ft. wide, and yielding 1 ton of ore per fm. The 80, west of shaft, was driven 3 fms. 5 ft.; the lode is 4½ ft. wide, and yielding 5 tons of ore per fathom. The 90, west of shaft, was driven 4 fms. 1 ft.; the lode is 4 ft. wide, and yielding 1½ ton of ore per fathom. The 100, west of shaft, was driven 4 fms.; the lode is 5 ft. wide, and yielding 3 tons of ore per fathom. The 100, east of shaft, was driven 2 fms. 2 ft.; the lode is 3 ft. wide, and yielding 2 tons of ore per fathom. The 110 cross-cut, north of shaft, was driven 2 fms. 3 ft.; the ground is still very hard, but there is only about 6 ft. further to drive to cut the lode. The 100, west of the skip-shaft, was driven 3 fms. 1 ft.; the lode is 3 ft. wide, and yielding ½ ton of ore per fathom. The 70 cross-cut, south of the skip-shaft, was driven 4 fms. 3 ft.; the ground is still hard for driving, and the cross-course is producing stones of muddle and spots of lead. The winze in the bottom of the 80, west of Gundry's shaft, was sunk 2 fms. 0 ft. 6 in.; the lode is 4 ft. wide, and yielding 3 tons of ore per fathom. The rise in back of the 20, west of Gundry's shaft, was put up 2 fms. 3 ft.; the lode is 2 ft. wide, and producing some saving work for copper ore. The rise in the back of the 60, on the south-east part of the lode, was put up 1 fm. 2 ft.; the lode is 3 ft. wide, and yielding ½ ton of ore per fathom. The rise in the back of the 70, west of Gundry's shaft, was put up 1 fm. 4 ft. 6 in.; the lode is 3 ft. wide, and yielding 2 tons of ore per fathom. The lode in the rise in the back of the 100, west of Gundry's shaft, is 4 ft. wide, and yielding 4 tons of ore per fathom. The winze in the bottom of the 90, east of Gundry's shaft, was sunk 2 fms. 4 ft.; this winze is communicated to the 100, and the men are put to rise in the back of the 100, west of shaft.

**MINERAL CORPORATION OF GREAT BRITAIN.**—William Bennetts, Jan. 7: HAFNA, HIGH HAFNA, and GREAT DERESBY: No. 1 slope in the back of No. 3 level, south of No. 1 rise, is looking well; worth 1 ton of lead and 1½ ton of blende per fathom. No. 2 slope is of much the same value as reported last month—12 cwt. of lead and 2 tons of blende per fathom.—Surface: We are getting on well with the dressing, and have a nice pile of lead. We have put up a new engine-house, and are getting on as quickly as possible with the erection of the stone-breaker.

**MONYDD GORDDU.**—J. G. Green, Jan. 7: The past week's report has resulted as follows:—The lode in the 34 is not so rich for ore, worth 10 cwt. per fathom; the end continues very easy for driving; 5 fathoms out of the 14 necessary to reach the end has gone down in the sand, and the adit lode in about two months. No. 1 slope, in back of the 34, is worth 1½ ton per fathom. The cross-cut north has passed through the cauter branch referred to in my report of the 24th ult., and the end is now in a hard lode, composed of felspar and quartz, containing no mineral. The lode in the 24 end west has fallen off in value, being disordered by a cross channel of ground. The winze from the 12 has holed to the 24, just in the eastern end of the ore ground; the men are engaged squaring this ground, after which I shall set them to stop the back sufficiently high to put in a stull, when a winze can be started in the ore for the 34. The rise in the back of the 24 is still in the big vug, worth 1½ ton of lead per fathom. The slope in the back of the 12 is worth 1 ton per fathom. Drawing and dressing are progressing favourably, and all our machinery is in first-class order. I contemplate sampling from 25 to 30 tons of ore by the 24th inst.

**MORFA DU.**—T. Mitchell, Jan. 8: The ground in the new bottom level is moderately easy, and good progress is being made in the driving. The driving, by the White Rock shaft is without change; we still find small branches of spar crossing the end.

**NEW BRONFLOYD.**—Thomas Kemp, Jan. 8: Setting Report: No. 3 Shaft: North Lode: In the 121 end, west of winze, nothing has been done during the past eight or nine days owing to the water being in the bottom of the mine, which was caused by several minor lets in the pitwork, consequently there is nothing new to report here. However, I hope to have the water out in a few days, when operations will be resumed. The men in the tribute pitch over this level, east of winze, are working well, and I think are earning fair wages; lode worth 18 cwt. of ore per fathom. Six men to stop the lode under the 52, west of shaft; the lode here contains more spar, now worth 1 ton of ore per cubic fathom.—Middle Lode: Four men to drive the 73 end, sawpit as reported last month, per fathom. The part of the lode opened on by this driving is composed of killas and spar, containing a mixture of ore, saving work for the dressing-floors, and is looking very promising for an improvement. Two men to rise and stop over this level, at 100s. per fathom; lode worth 1 ton of ore per fathom. Four men to drive the intermediate level, between the 52 and 73, at 160s. per fathom. Within the last week the lode has become more favourable for opening, being composed of killas, carbonate of lime, and friable spar, spotted with lead and copper ores, and is letting out a strong feed of water. From this change I am inclined to believe we shall have an improvement here in driving the lode a short distance further. A tribute pitch in the bottom of the 40, east of shaft, to two men, for two months, at 160s. per ton, to make the ore marketable. Surface machinery in good working order, and dressing is being pushed forward with all energy.

**NORTH DERESBY MOUNTAIN.**—Jan. 7: The following is the setting report of this mine. No. 1 adit let to four men, at 100s. per fathom, the men to pay for

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**THURSDAY.**—The announcement of the Metropolitan Railway dividend—5 per cent.—being only the same as last year is not particularly encouraging to op-



practically put up prices far above last year's level at this time. North-Eastern (now retd.) was then only valued at 128s., and Great Western at 92s. (now 114s.). York, 15, is 12 per cent. higher, and 14. Of course, with a greatly improved trade future prospects are far brighter than they were a year ago. Business was again restricted in home railways and foreign bonds, and prices languished. Atlantic First Mortgage opened 63½ to 64, but early in the day were selling at 66. Devon Consols rose materially, Wheel Crebor and Nouveau Monde being dealt in at lower prices.

FRIDAY (Opening).—Atlantic and Great Western securities are again an active market. The Second Mortgage are 11, higher (32½), and the First 5½ (67½). In the Thirds there is an advance of 1½, to 18½. The ordinary stock is selling at 8, but was valued at 3 last account. Egyptian Unified shows more strength than for some days past, and can be sold at 55. Peruvian Fives are 16. Mining shares continue firm. Rossa Grande obtainable a couple of days ago at 3s., are now quoted 3½ to 4. There must be a rise now in shares like Port Phillip, Pestarena, Javali, and Antioquia. Almada, 10s. to 12s. 6d.; Flagstaff, 1½ to 2½; Sierra Buttes, 1½ to 1¾; Don Pedro, ¾ to 1; Nouveau Monde, 1½ to 2; West Ashton, ¾ to 1; Wheel Crebor, 7½ to 8½; Parys Corporation, 1½ to 1¾. Two o'clock.—Egyptian Unified are now 55½ to 55¾, which is a rise of 1½ from the lowest of yesterday. Ottoman Bank, 11 to 11½. Turkish Fives, 9½ to 10. Peruvian Fives, 15½ to 16. Trunks have been very dull, but now show some signs of recovery, though still below yesterday's price. The Firsts are 68½, and the ordinary 14½ to 15. Business has been done in Devon Consols at 9½, in East Caradon at 4, in West Chiverton at 1½, and in Rossa Grande at ¾. Four o'clock.—Egyptian Unified have further advanced, now 55¾ to 56. Turks, 1½ to 1¾. Spanish, 15½. Mexican, 11 to 11½. Peruvian, 15½ to 16. Atlantics are again higher. The Second Mortgage being 33½ to 4, and the First 67 to 67½. Thirds being 16 to 16½. In railways, Brighton, A., are up to 138½; Caledonian being 108½ to 109½; North British, 68½ to 69½; and Great Eastern, 58½ to 59½. Chapel-house Colliery, 20s. to 30s.; Cardiff and Swansea, 2 to 3; Wheel Crebor, 7½ to 8½; Almada, ¾ to 1; Nouveau Monde, 1½ to 1¾. FERDINAND R. KIRK.

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The Mining Market: Prices of Metals, Ores, &c.

METAL MARKET—LONDON, JAN. 9, 1880.

IRON.	£ s. d.	£ s. d.	TIN.	£ s. d.	£ s. d.
Fig. GMR, f.o.b. Clyde..	3	11	6	56	0
Scotch, all No. 1 ..	3	11	0	57	0
Bars, Welsh, f.o.b. Wales 8 0 0	0	0	0	57	0
" in London ..	8	0	0	57	0
" Stafford ..	10	0	0	57	0
" in Tyne or Tees ..	8	0	0	57	0
" Swedish, London ..	11	0	0	57	0
Rails, Welsh, at works ..	8	0	0	57	0
Sheets, Staff., in London ..	10	0	0	57	0
Plates, ship, in London ..	10	0	0	57	0
Hoops, Staff., in London ..	10	0	0	57	0
Nail rods, Staff., in Lon. 9 10 0	0	0	0	57	0
STEEL.					
English, spring ..	15	0	0	57	0
" cast ..	30	0	0	57	0
Swedish, keg ..	15	0	0	57	0
" fag. ham. ..	15	0	0	57	0
LEAD.					
English, pig, common ..	19	10	0	57	0
" L.B. ..	19	15	0	57	0
" W.B. ..	20	0	0	57	0
" sheet and bar ..	20	10	0	57	0
" pipe ..	20	15	0	57	0
" red ..	20	15	0	57	0
" white ..	20	15	0	57	0
" patent shot ..	23	0	0	57	0
Spanish ..	19	5	0	57	0
NICKEL.					
Metal, per cwt. ..	15	0	0	57	0
Ore, 10 per cent. per ton ..	20	0	0	57	0
QUICKSILVER.					
Flasks, 75 lbs., war. (nom) 7 10 0	0	0	0	57	0
SILICA.					
Silesian ..	20	10	0	57	0
English, Swansea ..	21	0	0	57	0
Sheet zinc ..	26	0	0	57	0

\* At the works, 1s. to 1s. 6d. per box less for ordinary; 10s. per ton less for Canada; 1X 6s. per box more than 10 quoted above, and add 6s. for each X. Terne-plates 2s. per box below tin-plates of similar brands.

REMARKS.—Before commencing our report for the week we must apologise for a typographical error by which Chili bars were quoted 17. too high in last week's Journal. This will answer numerous inquiries and complaints which have been received in consequence.

The Metal Market has assumed an active appearance throughout the week, and prices for almost all metals have advanced, sellers for the most part remaining very firm, at the increased rates. As the demand continues to improve, it would almost appear that prices may even be run up still higher. Buyers would, therefore, do well to take into consideration the expediency of purchasing sufficient quantities may be driven. There is a good demand existing for forward delivery, and many contracts have been effected at the high prices, consequently when these prompts fall due every effort will be put forward by operators to maintain the market value. This has been the course of holders since the turn of the markets took place, and it is only right to expect they will continue to uphold the markets in every possible way to prevent depreciation. It is most remarkable the little attention which is given to the statistical position of the various metals, and it only shows the large speculative interest which exists in the markets when prices are upheld in the manner they now are, stocks for some metals being very large, and the production in excess of the consumption. Speculation may force up prices too quickly, and consequently quotations will doubtless fluctuate more or less; but as there seems every probability of the legitimate trade continuing to develop, there is every reason for believing that higher prices may be long be generally established throughout the trade than those previously ruling. At the moment nearly everything is in train for a further upward movement, which most sellers evidently expect, notwithstanding the heavy stocks, which most eventually influence the markets, although producing comparatively little effect at the present time. The prospect of a continuance of cheap money has a great deal to do with the turn which the markets have taken, and the spirit with which some operators are acting is deserving of every success. It is particularly satisfactory that the opening of the new year should be made under such favourable auspices, and that the markets are so completely reversed to what they were a year ago, and that although in most instances prices have undergone a considerable improvement, there is still a fair chance as trade develops of higher prices being attained, providing that nothing transpires to interfere with the ordinary course of business. To-day the markets for all metals close very firm, and prices assume an upward tendency.

COPPER.—Since our last report this market has undergone some sudden fluctuations; nevertheless the demand has, on the whole, kept tolerably good, but the official report from day to day has shown only slight changes in quotations. Sellers just now manifest hardly any eagerness to press sales, and buyers have had to pay higher prices to effect purchases. At the moment the superabundant stock forms little or no anxiety to recent operators, who are evidently indisposed to realise at present prices, believing that quotations may be advanced to a still higher figure for 4 X sheets have been placed at 75s. per ton, and yellow metal at 65s. per lb., and sellers are now asking 76s. and 65s. respectively. It is thought by some members of the trade that consumers are almost bare of stock, consequently it is hoped and expected that the heavy quantities now in public store may be long be reduced. Of course, to produce a sensible reduction in stocks much depends upon future changes, which must be light to make any good effect upon the market. At the public ticketing held at Swansea last Tuesday 2033 tons copper ore were disposed of, at an average of 13s. per unit. There will be no sale on the 20th instant.

IRON.—This market is strong, and prices have continued to show an upward tendency. The price of pigs has fluctuated more or less, but sellers of manufactured have remained very firm at the advanced prices, Welsh bars from stock in London realised 7½ 10s. per ton. As the improvement in this trade began with the increased demand from America, any news from that country must be of a most interesting character; we therefore, refer to a recent telegram from Philadelphia. The report of the American Iron and Steel Association shows an increase of 500,000 tons in the production over any previous year in the history of the United States. The imports of iron and steel in that country in 1879 were exceptionally heavy, and those of iron ore were five times larger than in any previous year. It is estimated that the imports of iron ore during the present year will be about 500,000 tons, and it is expected the home production of that country will exceed that of last. The recent statistics would bear out these remarks with regard to the production in this country, for there are now more than the average number of furnaces in blast; and, further than this, there is every probability of more furnaces shortly being put in blast on the East coast. At a large attendance at the quarterly meeting held at Middlesbrough last Tuesday it is reported that greater firmness was shown by makers and merchants than has been the case for some time past, and owing to the improved position of the Glasgow market the demand in this district was better. Makers were quoted 59s. and 60s. for No. 3 for delivery up to next April, whereas second-hand bars were offering at 57s. 6d. Transactions for immediate delivery took place at 56s. 6d., though it is said that 57s. was paid for one parcel. Forge iron was selling about 56s. per ton net. The stock in makers hands and stores last month increased by 399 tons, which brings the total up to 282,886 tons, against 337,000 tons in the previous December. Shipments for last month compare favourably with those for the same period in 1879, but the deliveries were reported as being small. There was an increased production of iron compared with November, the total make being 10,829 tons of which 7289 tons were hematite brands. In the district there are 96 furnaces going, whilst 69 remain out of blast. The make of iron for 1879 was 1,781,443 tons, against 2,023,177 tons in 1878, but the production this year promises to be much in excess of last, as more furnaces are being added to those already in blast.

There is considerable activity shown in the manufactured, and most of the establishments are employed full time. Enquiries are constantly being received for forward delivery, but owing to the rising market makers are loth to accept orders unless it be at enhanced rates. The price of bars has advanced to 82s. 6d., and ship plates 82s. 17s. 6d. to 92s. per ton. Everything at the moment is said to show symptoms of a continuance of a general revival in trade at Sheffield, prices tending upwards and the demand keeping particularly satisfactory. The works are all stated to be well employed, and large enquiries are constantly received for rails. There was a large attendance at the quarterly meeting at Birmingham yesterday and prices for all descriptions were exceptionally firm. Quotations for market bars were about 92s. being the same as was fixed at Wolverhampton at the commencement of the year. Although there were many buyers present from London, Liverpool, and other parts of the country, the orders given out were not particularly numerous. Ores, however, were in good request at increased prices. During the meeting the secretary of the Exchange read out the arbitrator's award as to ironworkers' wages, which was well received. The present year has opened well for the trade in South Wales, and at some of the establishments increased work is being given out. Fresh furnaces are being put in blast, and most if not all the forging are in full operation. Orders continue to be effected in large quantities, especially to America, where old material and railway iron are still being sent in large quantities. Quotations for finished iron have improved, and a better request for bars now exists than previously.

The Glasgow warrant market has been rather excited during the week, and at times there has been considerable eagerness to effect purchases. On Monday numerous transactions were reported between 59s. and 60s. cash; on Tuesday, 59s. 2s. to 60s. 7½d. cash, and 70s. 1½d. one month; on Wednesday prices were quoted down to 63s. 6d. cash; but yesterday quickly recovered, and business reported up to 63s. 11d. cash, and the market closes to-day at 71s. 3d. to 71s. 6d.

SHIPMENTS—FOREIGN AND COASTWISE.									
For the week ending Jan. 3, 1888	.....	Tons	6,577						
For the week ending Jan. 4, 1879	.....	Tons	4,655						
Total from Christmas to Jan. 6, 1880	.....								
1880.	1879.	1878.	1877.	1876.	1875.				
14,197	10,191	7,096	8,418	10,200	12,857				
Furnaces in blast Jan. 6, 1880	.....								
1880.	1879.	1878.	1877.	1876.	1875.				
100	92	86	108	114	121				
Imports of Middlesbrough Pig-Iron into Grangemouth:									
For the week ending Jan. 3, 1880	.....	Tons	7,562						
For the week ending Jan. 4, 1879	.....	Tons	4,655						

INCREASE OVER 1879 .. 1,819  
TIN.—Throughout the week this metal has gradually improved in value, fine foreign now being quoted as high as 93s. cash and 93½ 10s. forward, being an advance of about 20s. to 25s. per ton upon last Friday's quotations. There has been already a greater rise in the value of tin than in any other metal, yet prices have not been increased out of proportion to the demand, for the last statistics showed that the consumption was in excess of the supply; and, as the demand for tinplate purposes continues to increase, it is not unlikely but that the next statistics may show a further diminution in the actual stock. There is a good speculative business being transacted, and a large consumptive demand exists. The market for English is strong, and prices have advanced 1½ per ton, and a fair business is being transacted at the enhanced rate.

LEAD.—This market remains steady, and prices are firm, without any alteration having taken place in the official quotations. A fair number of orders are being received from home consumers at 19s. 10s. to 19½ 15s. for English pig, but shippers will not pay these figures very readily.

SPELTER.—Sellers are very firm at the increased quotations of 20s. 10s. to 20½ 12s. 6d. for Silesian, and 16½ is being asked for English hard, but the demand keeps limited.

ZINC is advancing in price.

STEEL remains in fair request.

TIN-PLATES are in good demand, and prices are rapidly advancing, 29s. to 30s. having been paid for IC cokes.

QUICKSILVER has been largely bought, and the importers have raised the price to 7½ 10s., refusing to sell any but the most retail quantities thereof.

MESSRS. HENRY ROGERS, SONS, and CO.—COPPER: During the year just closed this metal showed less disposition to respond to the general prosperity and activity surrounding the metal trade than any other article. The visible stocks appear to have overwhelmed it entirely, and frightened the consumers thereof have been steadily kept in check for the past ten years, and the extraordinary demand that has arisen for iron cannot but tend to increase that for copper, seeing that so far it is the railway and shipbuilding interests which have started the consumptive demand for iron. The Continent and India, as well as the home trade, have so far failed to respond to the very slight increase in value that has taken place in copper; one and all must buy sooner or later; the stocks of bar copper will then diminish to a material extent, and we may expect to see the price of this metal advance in a corresponding ratio to that of others. The month of August last saw the lowest price (53s. 10s.) at which Chili bar copper had ever been sold, but little was obtainable at this figure, and its very report on the market seemed a rallying point for buyers, who in a very few days were eager enough to advance their offers to purchase at 30s. per ton; since that period an advance has been maintained almost from day to day; 68s. cash was quoted for a short time, but a somewhat sharp reaction took place from this point, and a dropping tendency again took possession of the market as the close of the year approached, till prices settled down at 65s. This metal, no doubt, by reason of the visible stock, is in an anomalous position, but if due allowance be made for these, being mostly in first hands, and for the ordinary expansion of the trade, we believe the fair conclusion to be arrived at is that of all metals copper is by far the cheapest at present prices.—TIN.—In the month of October, 1878—ever memorable for the collapse of the City of Glasgow Bank—this metal stood at 53s. per ton, whilst the price of tin-plates was 14s. per box for IC cokes. The price of tin is now 92s., and plates 28s., and both have nearly doubled in value. The advance in tin during the last three months of 1879 was some 10s. per ton, and with slight variation it averaged near the advanced price still September, 1879, being 10s. 10s. added to the quotations. Since that period the value gradually increased with but slight reaction to 95s. Vast quantities of tin changed hands towards the close of the year, the sales in November being enormous; but the market seemed to absorb everything, and the reaction from the top prices reached have barely exceeded 3s. per ton. There has been a very large American demand for foreign tin, and tin plates also have been selling in considerable quantities for the States, hence the steadiness of the market, besides which the exports from Singapore to England have certainly diminished, whilst the Australian supply, whilst being short, is by no means excessive. The advance in the price of tin in four months is so very heavy that a reaction might well be looked for, but at this moment there is no sign of a reaction being imminent. Tin-plates have been in very largely increased demand, and makers have advanced their prices almost 100 per cent. It is believed that most works are well off for orders for four months to come.

MESSRS. PILEY and ABELL.—GOLD.—The only withdrawal from the Bank has been 60,000l. in sovereigns for Monte Video. The demand for America is sufficiently active to absorb any arrivals that may come on the market, but the changes are not yet a point at which will admit of reserve to the Bank. We have received since our last 1200l. from the West India 1890l. from the Brazils, and 16,120l. from India—23,200l. The production of gold in America in 1879 is estimated to have been 320,000,000, as against 347,000,000 in 1878.—SILVER.—A moderate demand still exists for silver, but the market has an easier tendency, and 52½d. per oz. is the quotation for to-day. Arrivals continue small, and the only amount of estimated importance is coming by the Pacific steamer on the 14th inst. About 12,000l. have been received from America, and 7000l. from

Hamburg. The P. and O. steamer takes 39,000l. to India to-day. The estimated production of silver in the United States in 1879 is stated to be 411,000,000, as against 446,000,000 in 1878.

THE MINING SHARE MARKET has been in a very excited state for one or two mines this week, and some of them have advanced considerably in price. General business also has been more than usually active, and any sudden demand for a particular mine has caused a rise in shares, and a difficulty in getting them at anything like the previous day's quotation. The mines mostly dealt in have been the most prominent tin mines, and also Devon Consols, South Caradon, Wheal Crebor, East Caradon, Parys Corporation, Morfa Du Van, Wheal Uny, D'Eresby Mountain, Aberllyn, Roman Gravel, South Darren, Prince of Wales, Pandora, Glenroy, Herodsfoot, &c.

TIN.—The standard for tin ore was advanced on Monday 3½ per ton, and in anticipation of it a great demand sprung up in tin shares on Saturday, and the rise in the price of some has been considerable. Carn Breas are quoted 7½ to 80; Dolcoaths, 5½ to 60; East Pools have advanced from 22 to 25, 26; South Curdrow, 1½ to 12½; Tincroft, 1½ to 18½; Cook's Kitchen, 4½ to 5; East Iovell, 1½ to 2; Phenix, 4½ to 5½; Wheal Uny's have advanced from 2½ to 3½, 4; at the meeting, on Tuesday, the accounts showed a loss of 1000l. on four months' working, and a balance against the mine of 2361½, 8s. 5d. A call of 5s. per share was made. The tin sold—73 tons—realised 3673½, 17s. 4d. West Bassetts have advanced from 12 to 14, 18; Wheal Basset, 2½ to 2½, 3; Wheal Agar, 6½ to 6½, 7; Wheal Grenvilles have partaken of the general movement, and have advanced during the week from 4½ to 5, 6.

Wheal Pevor have risen from 22 to 25, 27; the various points in the mine are valued in the aggregate at 273½ per fathom. The bottom level is valued at 43½ per fathom. Wheal Pevor have risen from 7 to 9, 10. South Frances, 13 to 14; the lode in Pascoe's shaft is valued at 50½ per fathom; the 215 west, 25½; rise in back, 25½, North Penstruthal, 20s. to 25s. South Crofty, 9 to 10. Penhalls, 1½ to 1½. West Frances, 18 to 19. Wheal Kitty (St. Agnes), 2½ to 3. Wheal Owles, 100 to 110. Wheal Jane, 4 to 4½. Wheal Sisters, 17½ to 20; we understand all the forfeited and relinquished shares have been disposed of, and at the meeting on Feb. 10 the accounts will show a credit balance of at least 500l. The mines are at present working at a profit of about 150l. a month, and with the improved price for tin this is likely to be considerably increased. The Wheal Sisters include many well-known mines that paid large dividends for many years—Wheal Kitty, Mary, Margaret, and Trencrom.

COPPER MINES have been in good demand, and one or two have risen considerably. Devon Great Consols have advanced during the week from 6½ to 10, and leave off 8½ to 9½, and a large business has been done in them. Wheal Crebor are firm, at 8 to 8½; the report shows that the aggregate points in operation are valued at 240l. per fathom, the ends 166½. The 108 east, on the new lode, has improved to 35½ per fathom. Parys Corporation shares have been rather weaker, owing to the large number of shares sold for realisation of profits, and without regard to the mine, the latest report from which states that the lode in the 90 cross-cut south is worth 25½ per fathom, and the agent thinks the main lode still before him. The tribute pitches continue to look well. They leave off 30s. to 35s. Hingston Down, 7s. 6d. to 12s. 6d.; Gawton, 10s. to 12s. 6d.; Mellanear, 4 to 4½; Marke Valley, 25s. to 30s.; New Cook's Kitchen, 6½ to 7. Morfa Du largely dealt in at 20s. to 25s. East Crebor, 20s. to 25s.

South Caradons have advanced from 70 to 130, 150, owing to an important improvement in the bottom of the mine. East Caradon rose in sympathy with South Caradon, and on Thursday reached 4 to 4½, but leave off 3½ to 4. West Tolgas, 25 to 27½; at the meeting in Cornwall the accounts showed a profit of 213½, 8s. 2d. on the two months' working, and a credit balance of 1432½, 0s. 7d. The ores sold and to be credited next account realised 2909½, 8s. 6d., and the costs to be brought against it will be rather more than the costs charged in present accounts. Prince of Wales, 10s. to 15s.

LEAD still advances, and although the rage for the week has been for tin mines, shares in lead are firm, and, like copper shares, are being quietly purchased for a further rise. Van, 23 to 25; the sale of ore this week shows a great advance in the prices both of lead and blende; 200 tons of the former realised 2858½, 15s.; blende, 75 tons, 311½, 15s. Roman Gravel, 12½ to 12½; the sale here of 200 tons of lead ore realised 2655½, or 13s. 5s. 6d. per ton. Tankerville, 5½ to 6; Great Laxey, 18½ to 19½; Leadhills, 4 to 4½.

D'Eresby Mountain, 35 to 45; Aberllyn, 10 to 12; Clementina, 1 to 1½. South Darren, 3½ to 3½; the 110 east has further improved to 2 tons, or 37½ per fathom, which looks well for the eastern ground. The 100 west has also improved to 2 tons. The lode in the cross-cut at the 90 end is worth 1 ton per fathom. The monthly sale of 60 tons of lead ore realised 18½, 4s. per ton, 910l., an advance of 21s. 6d. over last month. The quarterly sale of copper, 60 tons, realised 250l. Glenroy, 17s. 6d. to 22s. 6d.; the agent reports a further improvement in the lode driving north; more lode is standing by the side, and there is a mixture of blende and a good deal more quartz in the end. Derwent, 2 to 3; in the six months ending December the returns very nearly met the expenses, although the price of lead was much below what it is now. Assheton, 1½ to 1½; East Chiverton, 2½ to 2½; East Van, 2 to 2½; Gorsedd and Merilyn, 1½ to 2½; Grogwinion, 3 to 3½; Herodsfoot, 3 to 3½; Minera, 10½ to 11½; North D'Eresby, 1 to 1½; Pandora, 17s. 6d. to 22s. 6d.; Van Consols and Glyn, 2 to 2½; West Assheton, 3½ to 3½; West Chiverton, 10½ to 10½; West Holway, 1 to 1½; Caron, 1½ to 2½; Crosswood, 1 to 1½; Frongoch, 4 to 4½; Harleigh, 1½ to 2; Mawston, 1½ to 2; Red Rock, 1½ to 2; West Wye Valley, 2 to 2½; Wye Valley, 1½ to 2½; Gwernymynydd, 5½ to 6; Pateley Bridge, 15s. to 17s. 6d.

FOREIGN MINES.—Almada, 10s. to 12s. 6d.; Cape Copper, 35 to 37; Chontales, 14½ to 14½; Canada Gold, 1½ to 1½; Don Pedro, 14s. to 16s.; Eberhardt and Aurora, 2½ to 3; Flagstaff, 1½ to 2½; Frontino and Bolivia, 2½ to 2½; Missouri, 10 to 11; New Quebrada, 4½ to 4½; Nouveau Monde, 1½ to 1½; Panulillo, 5 to 5½; Pestarena, 4s. to 6s.; Richmond, 10½ to 11½; St. John del Rey, 25s to 26s; South Indian Gold, 1½ to 1½; Ruby, 5½ to 5½; Rossa Grande, 2 to 2½; Blue Tent, 1½ to 2. Placerville, 2½ to 2½; mine looking well. Birdseye Creek, 2 to 2½; washing steadily.

The Market for Mine Shares on the Stock Exchange was last week reported to have fulfilled the most sanguine expectations of those who anticipated that the new year would open well; but the present week has shown that this opening gave but a slight foretaste of the activity and prosperity to be looked forward for in 1880. For holders of mine shares the week has been one of the most cheering they have had for a long time, and the way in which it closes gives them some assurance that, although there may no doubt be some reaction, an important rise upon the closing prices of 1879 will be permanently established. The market has been favourably affected not only by the better spirits of capitalists but also by the announcement of a valuable improvement in one mine and encouraging progress in others. South Caradon has advanced during the week to 150l. to 160l. per share, owing to one of the most important discoveries made in the Caradon district for many years. Holman's lode at the 200 fm. level being at the bottom of the mine has been cut into, and so far as seen is worth 3 to 4 tons of rich copper ore per fathom, worth 8l. to 10l. per ton. The agents believe this discovery will prove to be a permanent benefit to the mine. Good dividends will, it is said be paid this year, and the newly started rock-boring machinery is giving great satisfaction. The shares at anything like 150l. to 200l. are spoken of as a good investment, the company being in only 512 shares and the price of them having been at one time 500l. to 600l. each. If these discoveries open out as expected the old prices may, it is thought, again be reached, and that at no very distant period.

The Provincial Share Markets continue to present a satisfactory appearance. At Manchester they have scarcely recovered from the holidays; but a fair amount of business is reported, and prices are generally higher. The business on the Manchester Stock Exchange yesterday included (\* = odd lot) at 11 1-16th dis.; John Brown at 10½ and 10; Nant-y-Glo and Blaina, at 24½; Staveley, C, at 85; and Tredegar, B, at 22½. At Newcastle-on-Tyne business is generally better, and prices are improving. At Hull the year opens encouragingly, the local stock—banks, docks, and tramways—receiving



considerable attention. The Cornish Share Market is very animated, the rise of 3s. in the tin standards on Monday having produced a favourable impression. Not only is much business doing, but in most cases higher prices have been obtained.

Some few weeks since we announced a great discovery of tin at the Rocks Tin Mine, about two miles from Roche proper, and close to the Bugle station on the Cornwall Minerals Railway. The eastern part of the mine was once worked by Mr. Webb, the celebrated engineer; and, although he was a mechanic, and not a miner, the mine paid very well, and became reputed as the best little mine in the district. It was worked to a depth of 60 fms. from surface, and returned about 30 tons of black tin per month, at a good profit. In some way, however, they lost the lode, and suspended operations. In November they recommenced working, and in 20 days out the lode, which was found to be of excellent appearance and great width. The lodestuff is of a fine loose grain, and well impregnated throughout with tin. Although the lode requires blasting, it is an easy stamping stone, and yields from 160 lbs. to 200 lbs. of black tin to the ton. Several writers, probably envious of the success achieved, forwarded malicious communications concerning the discovery, one of these being authenticated by "J. T. Dyer, St. Stephen's Coombe, Grampound." But upon our thus addressing a letter we were much surprised to have it returned through the Dead Letter Office, marked "Not known;" whence it is evident that we were intentionally duped in the matter. As the letter contained many evidently gross misstatements and personal allusions, we had, under these circumstances, no hesitation in forwarding the manuscript to the solicitors of the parties aggrieved, and express our regret that the Journal should have been made the vehicle for such an attack. It is unnecessary to suggest that no right-thinking reader will permit himself to be biased by statements so false and malicious.

The Carnarvon Copper Company, with a capital of 20,000*l.*, in shares of 1*l.* each, has been formed to purchase for 12,000*l.* (all in fully paid shares) the Symdye Dylluan Mine, which was very favourably noticed some few years since by an esteemed correspondent of the *Mining Journal*, Mr. Henry Sewell, M.E. From the illustrated description of the property, contained in the circular of Messrs. Watson Brothers in another column of to-day's Journal, it will be seen that the mine adjoins the Drwys-y-Coed, which has been productive for 100 years and made enormous returns. It is now proposed to fork the mine, put in larger pumps, and work energetically. They expect a splendid crop of copper at the 90 fm. level. Capt. Roberts proposes to dress the ore to 12 per cent. instead of 8 per cent., and thus realise a higher price and save freight. Subscriptions are now invited by Messrs. Watson for 5000 of the unappropriated shares, it having been determined to hold the remaining 3000 in reserve.

The Tramways and General Works Company are offering for sale at 21,000 fully paid 10*l.* ordinary shares in the Bordeaux Tramways and Omnibus Company, the capital of which consists of 10,000 5 per cent. preference shares of 10*l.* each, and 25,000 ordinary shares of 10*l.* each. The concession, which was purchased by tender in April last, is for a term of 31 years and three months, from Jan. 1, 1880, and entitles the concessionaires to purchase the working stock and plant of the General Omnibus Company of Bordeaux, consisting of 145 omnibuses, 591 horses, and a large stock of harness and stores. This was effected on Nov. 1 last by the Tramways and General Works Company, and the service of the omnibuses has since been worked by them. The tramways will comprise a total length of about 33 miles, and are to be laid out to accommodate in the most complete manner the large existing traffic of the town, and to provide for its future development; the greater part of the system following the routes of present omnibus services, which as the tramways are completed will be put on to adjacent additional routes, and will serve as feeders to the tramways. The average receipts of the omnibuses for the year ending Oct. 31, 1879, were about 53,000*l.* sterling a year gross, and the Omnibus Company, in addition to making large reserves, divided amongst its shareholders during that period no less than 22,900*l.*, notwithstanding the limited and contracted nature of the service, and its inadequacy to the increasing population of Bordeaux and its suburbs, already upwards of 250,000. The Bordeaux Company are also to receive the net profits on the working of the omnibuses from Nov. 1, constituting an immediate and considerable source of revenue, and also the caution-money deposited by the Tramways and General Works Company—viz., 300,000*fr.* (about 12,000*l.*), of which five-sixths, or 10,000*l.*, will be released on completion of the undertaking, and the balance at the expiration of the concession. The prospectus will be found in another column.

The Rio Grande do Sul (Brazil) Gold Mining Company, formed with a capital of 200,000*l.*, in shares of 5*l.* each, are inviting subscriptions for the first issue of 10,000 A shares, payable 1*l.* on application, 1*l.* 10*s.* on allotment, and the balance in calls at three months notice, and 2400 fully-paid vendors' shares. Of the nominal capital 55,000*l.* is represented by vendors' fully-paid shares and share warrants, so that 145,000*l.* will remain applicable to the development of the property. The prospectus is framed chiefly on the report of Mr. Hubert Bankart, who has been three months at the property; has cleared out and examined old workings, and brought home excellent specimens of gold ore, most of which are shown by the assays of Messrs. Johnson and Matthies to be exceedingly rich, one sample of Auriferous pyrites yielding at the rate of 135*oz.* of gold and over 41 *oz.* of silver. A 2*½*-cwt. sample of Auriferous ore yielded at the rate of about 14*oz.* of gold and 15 *oz.* of silver per ton; and a 1-ton sample of Silva ore yielded over 3*½* *oz.* of gold and over 1*½* *oz.* of silver. It is estimated that in 18 months, with 25,000*l.* of machinery, and 70,000*l.* of working capital, a net profit—taking the ley of the ore to average only 1*½* *oz.* of gold all round—will be 59,111*l.* The prospectus will be published next week.

Devon Great Consols shares have continued to gradually rise all the week, and close at 9*½* to 10, with an upward tendency; indeed, the opinion is widely expressed that they are likely to go to more than double the present price, as negotiations are said to be progressing favourably with regard to a contract for some large portion of the company's produce, which will, it is expected, at no distant period enable the directors to resume the payment of good and regular dividends. The month's sampling of copper ore, notwithstanding the severe weather for dressing operations, is 848 tons, which will be sold on the 22nd inst. The rock-boring machinery is progressing satisfactorily.

Phoenix and West Phoenix shares have advanced to 5*l.*, 6*l.*, owing to the improved prospects of the mines. With the increased and now large sales of tin it is said that dividends will be regularly paid. At one period the property was quoted at a marketable value of about 200,000*l.*, or equal to about 16*l.* to 17*l.* per share. West Tolgus, 27 to 28, and the mine stated to have better prospects, and some important discoveries are expected. Wheal Sisters shares have changed hands to a good extent, and advanced to 20, 25. These mines are amongst the largest and best tin mines in the western part of Cornwall.

Missouri Lead, 10 to 11; advices received this week state that work generally is being actively pushed forward, and that everything is going on satisfactorily. The retimbering of St. Clair shaft is progressing rapidly, and it is thought that the contractor will complete his work in less time than stipulated. Lead remains very firm in St. Louis, at about 26*l.* per ton, with an active demand.

Canada gold, 1*½* to 1*¾*. A 30 *oz.* sample of gold has been received from the chairman, and may be seen at the London Office, Austinfrans, on Tuesday.

Cape Copper, 36 to 37; a circular dated Dec. 30, and issued by Mr. Edward Budd, of Walbrook, was applied for last week, but not supplied, although that gentleman now pleads "extenuating circumstances"—that it was only intended to be sent to a portion of the shareholders. The non-publication of Mr. Budd's views, however, turns out to be fortunate, as the directors' reply, which exposes all his fallacies, can now be read at the same time. Mr. Budd's circular is obviously in the interest of certain smelters, who do not like the idea of the Cape ore being taken out of the market. The only points worthy of attention in Messrs. Budd and Budd's circular are that the smelting of copper ore requires long experience and special technical knowledge, which are not possessed by our directors, managers, or secretary in any degree, and involves also the purchase of other ores than those produced by the mining company; and that smelting business is known to require considerable capital, and the company has no funds for the purpose.

Both these points are fully and conclusively answered by the directors, who state that the services of thoroughly competent assistants are secured to the company, and inasmuch as they will always have to deal with the same ores, of which they are ensured an abundant and regular supply of unvarying quality, and that their purity is such as to make their smelting exceptionally easy, the amount of technical knowledge required for their treatment presents no difficulty. In the course of last year 1150 tons of Cape ore were smelted at the Briton Ferry Works without the admixture of any other ore whatever, a small quantity of poor ore only being afterwards employed for the purpose of cleaning the resulting slags. The suggestion that a large capital is required in copper smelting does not apply to this company. Its necessity mainly arises in ordinary cases owing to the outlay required in the purchase of ores. This company already possesses its own, and with a regular supply they can be converted into saleable metal, and thence into cash, as soon as it is sold as ores. The chief outlay, apart from the purchase of the works and plant, will be for fuel and labour, the extent of which is known and is not considerable. It is only necessary to repeat the expression in Messrs. John Taylor and Sons' circular of the 1st inst., that the "decision of the board has been arrived at after mature consideration, and the adopted under a complete conviction that the best interests of the shareholder will be secured by it."

The market shows evident symptoms of the commencement of a mania in gold mines, and India appears to be the country to which

attention is principally directed as the most promising field for enterprise. A detailed report on the South Wynaad district, with illustrations, was published in the *Journal* of Dec. 14, 1878, but owing to the depression the matter has until quite recently remained in abeyance. With the renewed activity the South Wynaad has been that to which British capital has been first applied, and no doubt is entertained that the result will be satisfactory to all concerned. At the date in question it was stated that Mr. R. Brough Smyth had already discovered, in an area of 25 miles by 13, no less than 90 outcrops of ore reefs, with a thickness of 2 ft. to 4 ft., yielding from a few pennyweights to 200 *ozs.* per ton. From the samples of the auriferous quartz received it is evident that the veins are very similar to some of those which have been most successfully wrought in Victoria, Australia; indeed, the resemblance to some of the Bendigo reefs is striking—abundance of the visible gold, and the quartz stained with iron just in the same way. The district was also inspected by Mr. Oliver Pegler, A.R.S.M., and although he appears to have made but a superficial survey at the time when he made the report, he has recorded enough to show beyond doubt that the district is capable of yielding enormous wealth. A few weeks since reference was made to the formation of the South Indian Gold Mining Company, and it is understood that the shares were not only very freely subscribed for, but that during the past week they have been in strong demand, and close to night at 1*½* to 2*½*, or 3*½* to 4*½* premium. Several other influential companies are about to be launched, and all acquainted with the locality are sanguine of success.

Nouveau Monde, 1*½* to 2*½*; the report of the Gérant, comprising also reports of Messrs. John Taylor and Sons and Mr. Oxlund, on mining properties in the Roscio department in the State of Guayana, Venezuela, has been issued this evening. The company have accepted the provisional contract for the purchase of the mines there. Mr. Oxlund is now on his way back to Venezuela, clothed with full powers to complete the purchase and take possession of the property, and he will remain there as resident superintendent and agent of the company at the mines. The reports of Messrs. John Taylor and Sons and of Mr. Charles Oxlund are decidedly favourable. From these it appears that the purchase will comprise ten concessions of vast area in the richest gold-producing districts, including not only the already developed Nacupai Mine, with its machinery and reduction works, capable of being at once carried on with profitable working, but also other concessions of great value. One of these, which it appears, "has attracted much attention," is in the immediate vicinity of the very rich Mocupia and Potosi Mines, and the "well-defined lode" is supposed to be constant through these properties. The Gérant calls the attention of the shareholders to the documents annexed, as affording the best assurance of the future position of the company and the prospective value of their investments.

Richmond, 10*½* to 11*½*; the usual telegram from the mine at Eureka, Nevada, states that the week's run was \$55,000 from 840 tons of ore from furnaces Nos. 1 and 2 only. During the week the refinery produced doré bars to the value of \$5,000. There have been some interruptions from frost. The manager (Dec. 17) reports that the explorations in the mine have been carried on with vigour, and with good results. In the main drift the fissure is still regular and well defined. The ground in the 400 north from the No. 8 chamber is in ground hard but favourable for ore. All the chambers are opening out very well; on the whole there is a decided improvement since last week. The No. 1 furnace was started up this morning (December 17), and is doing very well, and the other two are in good working order.

Ruby, 5*½* to 5*¾*; the manager's report shows several marked improvements in the workings during the week, and is altogether highly satisfactory. The Bullwhacker Mine promises to open up an important property, in addition to the Dunderberg, on the several lodes which are there being developed.

Almadá and Tiritó, 3-16ths to 5-16ths; the latest report and telegrams received are considered more than usually interesting. A great discovery appears to have been made at the 12 in Mina Grande, where there is a lode 20 ft. wide. Details are at present wanting, but inasmuch as the lode is reported more copper, good ley of ore, and looking well, there is little doubt of its great value. The shaft furnace recently erected is turning out considerable quantities of base bullion, consisting of argentiferous copper matte, and argentiferous pig-lead. The produce returns silver very close to the assays; altogether, the prospects are very encouraging.

In Hydraulic or Gold Washing Companies shares there has been somewhat more business, but they have not fully participated in the general activity. Blue Tent, 1*½* to 2; washing is being carried on steadily with all available water, and the appearances are good for a continuous supply. Birdseye Creek, 5*½* to 6*½*; all the water available is being used, and the agent is of opinion that he will be able to increase the time very soon. Placerilla, 1*½* to 1*¾*; the mill was to start crushing ore on the 1st. The mine continues to open out remarkably well, and there is plenty of ore in sight for the mill.

In Lead Mine Shares the activity continues unabated, even the rise in the tin standard, which caused quite a run on tin mines, and the South Caradon discovery, which also attracted attention in another direction, having little or no effect in lessening the business for lead shares. This is, no doubt, due in some measure to the continued upward movement in the price of lead ores. The prices obtained for the Van ore showed an important advance, and the same remark applies to all mines which have sent ore to market.

Van, 24 to 25; the sale on Thursday (200 tons of lead and 75 tons of blende) realised 317*l.* The dividend of 10*s.* per share announced last week has been paid. Gwernymynydd, 5*½* to 6; the lode in the rise continues worth 4 tons per fathom; 50 tons of lead sold yesterday to Messrs. Walker, Parker, and Co. realised 13*l.* 8*s.* 6*d.* The bottom flat is again opening out into a course of ore. Mining Corporation, 1*½* to 2; the manager reports that they are getting on well with the dressing and have a nice pile of lead. They have put up a new engine-house, and the erection of the new stone-breaker is progressing as satisfactorily as possible.

Grogwinion, 3 to 3*½*; good accounts continue to be received. Froncoch, 4 to 4*½*; a parcel of 100 tons blende has been sampled for sale next week, and 100 tons of lead is also nearly ready for market. The accounts respecting the mine are quite equal to expectation, and prospects are brilliant. Caron, 1*½* to 2*½*; good progress making here. Red Rock, 1*½* to 2; a parcel of 40 tons of lead is ready for sale. Wye Valley, 3*½* to 4; no fresh news. West Valey, 3*½* to 4*½*; operations are going on well since the frost has disappeared.

Pateley Bridge, 3*½* to 4; the 40 east, on Rake vein, is producing 1*½* ton of ore per fathom. The agent is expecting an improvement here shortly; this vein at the back of the 40 west is worth 2 tons per fathom. In the 30 east, on the same vein, the appearances are extremely good for a further improvement. Other parts unchanged. The produce for last month was 50 tons of dressed ore. The liquidator of the De Bevoise Mine is inviting tenders for the property as a going concern; it has yielded large quantities of lead ore, is worked by water power, and is well found in all requisite machinery.

The subjoined is the list of the closing quotations:—  
Aasheton, 1*½* to 1*¾*; Carn Brea, 7*½* to 8; Devon Great Consols, 8*½* to 9; East Caradon, 3*½* to 4; East Van, 2 to 2*½*; Gwernymynydd, 5*½* to 6; Glenroy, 3*½* to 4; Great Laxey, 18 to 19; Hington Down, 3*½* to 4; Leadhills, 4*½* to 4*¾*; Marke Valley, 1*½* to 1*¾*; Pateley Bridge, 3*½* to 4; Roman Gravel, 12*½* to 12*¾*; Tankerville, 5*½* to 6; Tincroft, 17 to 18; Van, 23*½* to 24*½*; West Aasheton, 3*½* to 4; West Basset, 14 to 16; West Olveston, 1 to 1*½*; Wheal Crebber, 8 to 8*½*; Wheal Grenville, 5*½* to 6; Almadá and Tiritó, 3*½* to 4; Birdseye Creek, 5*½* to 6; Blue Tent, 1*½* to 2; Canada Gold, 1*½* to 1*¾*; Cap Copper, 34 to 36; Chontales, 3*½* to 4; Colorado United, 1*½* to 2; Don Pedro, 3*½* to 4; Eberhardt and Aurora, 2*½* to 3*½*; Eschequer, 3*½* to 4; Frontino and Bolivia, 2*½* to 2*¾*; Flagstaff, 1*½* to 2*½*; Huilafat, 1*½* to 2; Kapanga, 3*½* to 4; Missouri, 10 to 11; Nouveau Monde, 1*½* to 2*½*; Pestarena, 1*½* to 2; Placerilla, 1*½* to 2*½*; Port Phillip, 3*½* to 4; Richmond Consolidated, 10*½* to 11; Ruby and Dunderberg, 5*½* to 5*¾*; St. John del Rey, 25 to 26; Santa Barbara, 2*½* to 3*½*; Sierra Buttes, 1*½* to 1*¾*; United Mexican, 2*½* to 3.

At Swansea Ticketing, on Tuesday, 2033 tons of ore of 10 average produce, and containing 203 tons 1*½* cwt. of fine copper, were sold for 13,200*l.* 9*s.* 6*d.*, being 6*l.* 9*s.* 10*d.* per ton of ore, 13*s.* per unit, or 64*l.* 19*s.* 2*d.* per ton of fine copper in the ore, and an average standard of 89*l.* 5*s.* for 9 per cent. produce. Subjoined are the particulars of the two last sales:—

Date.	Tons.	Standard.	Produce.	Per ton.	Per unit.	One copper.
Dec. 16	2109	89 1 10	8 <i>½</i>	£5 15 4	13 <i>s.</i> 0 <i>d.</i>	2 7
Jan. 6	2033	89 5 0	10	6 9 10	13 0	64 19

Compared with the last sale, the decline has been in the standard 1*l.* 17*s.*, and in the price per ton of ore about 3*s.* 8*d.* Messrs. Richardson and Co. report that the Betts Cove ore gave a produce of 6*½*, and realised 13*s.* 2*d.* per unit; Berehaven, produce 9 7-16, per unit 12*s.* 11*d.*; Vimeberg, produce 13 3-16, per unit 12*s.* 9*d.*; Caveira, produce 9, per unit 11*s.* 11*d.*; Chill, produce 26 5-16, per unit 13*s.* 7*d.* There will be no sale on Jan. 20.

TRAMWAYS.—The closing prices of this evening, as quoted by Mr. W. ABBOTT, of Tokenhouse-yard, are given in tabular form in the last page of the *Journal*.

GAS SHARES.—The principal business in these shares, according to this evening's report of Mr. W. L. WEBB, of the Stock Exchange and Fench-lane, has been in Gas A, 173, 5; Imperial, 173, 5; Phoenix, 34, 5; South Metropolitan, A, 185, 19*s.*; ditto, B, 180, 19*s.*; London, 170, 17*s.*; Commercial, 173, 17*s.* Gas shares are firm, and show a general improvement. († exceptional amount at special price.) For closing prices see list on last page of *Journal*.

INSURANCE SHARES have, according to this evening's report of Mr. W. L. WEBB, of the Stock Exchange and Fench-lane, been dealt in as follows († exceptional amount at special prices):—Alliance, 28*½*, 29*½*; Rock, 8, 8*½*; Universal, 6*½*, 6*¾* prem.; Thames and Charterd, 6*½*, 6*¾* prem.; London and Provincial, 2*½*, 3*¾* prem.; Phoenix, 298, 303; Commercial Union, 19*½*, 20*½*. Insurance shares are steady, Universals show an improvement of 1*l.* on the announcement of the dividend. For closing prices see list on last page of *Journal*.

CORNISH MINING SHARE MARKET.—Mr. JOHN CARTER, mining shareholder, Camborne (Jan. 9) writes:—The share market has been very active during the week, prices having again advanced, and a large business has been transacted. To-day's quotations are not the highest reached, but this evening's market is firm. Carn Brea, 78 to 80. Cook's Kitchen advanced to 4*½*, 5. East Pool, 25 to 25*½*; South Frances, 13*½* to 13*¾*. Wheal Uny advanced to 3*½*, 4. South Condurow, 11*½* to 11*¾*; South Crofty, 10 to 10*½*; West Basset, 14 to 14*½*; West

Frances, 18*½* to 19; New Cook's Kitchen, 7 to 7*½*; West Peavor, 8*½* to 9; Wheal Peavor, 25 to 26; Wheal Grenville, 5*½* to 6; Tincroft, 18*½*.

\* With this week's *Journal* a SUPPLEMENTAL SHEET is given, which contains—Original Correspondence: Royal School of Mines; on the Manufacture of Iron and Steel; Carriage by Rail of Nitro-Glycerine Explosives (Keith Leslie); Kearsley Colliery Explosion; the Northern Coalowners (W. J. Thompson); the Bilbao Iron Ore Traffic (W. J. Thompson); Cheap Sodium and Aluminium; Removal of Gases from Metals; New Double Rotating Biddle; the Suomi Pumping Engine (Hermann); the Panulicillo Copper Company; New Mexico—its Future Importance for Copper Production—the Consolidated Naciminto Copper Mines (F. M. F. Cazin); Mining in North America (W. Pooley); Flagstaff Silver Mining Company of Utah (A. A. de Metz); All about Tin—an Enquiry (W. Tregay); Lead Mining in Durham; South Wheel Frances (A. T. James); Investments in Mines; Cornish Mining (O. Bawden); Dyllue Mine, and North Wales Correspondent (R. Dean); Cheap Shares—Killifreth; Mining in Llanarmon—Pant-y-Mwyn (W. Francis). The Scotch Mining Share Market—Weekly Report and List of Prices; Provincial Stock and Share Markets; the Coal Trade. Meetings of Public Companies; Colonial Bank; Russian (Vyksounsky) Ironworks Company; Wheal Uny Mining Company. Colorado's Great Mining Camp. Mining Companies Registered in 1879. Foreign Mines. The Sydney International Exhibition—No. V. Foreign Mining and Metallurgy. Patent Matters; &c.

NORTHERN LEAD MINING COMPANY.—We noticed briefly last week that this company had been formed to take over the late Rookhope Company's mines, and to work them vigorously. This valuable property is very extensive, and is situated in the centre of the oldest and most productive mines in the kingdom. It contains three lodes that have been worked to great advantage and profit in the adjoining mine for centuries, and have also yielded largely in the property now acquired by the Northern Company, though the ground yet opened is not very extensive; but there are already at Stotsfield Burn part of the property 2000 fathoms of ore ground in a state to be operated on at once, which will be worked on tribute, and are estimated to yield at least 30 tons of lead ore per month to start with. With a moderate outlay of capital several important objects will be carried out here, which will largely increase the mineral resources of the mine. At Brandon Walls and Thorny Brow the prospects are also exceedingly promising, and a small amount laid out upon them will almost certainly place them in a position of more than their former great productiveness. The Brandon Walls and Thorny Brow lodes have yielded handsome returns close up to the boundaries of the Northern Company's ground. For a considerable time the Rookhope Company carried on the mines under the great disadvantage of a very low price for lead—7*l.* per ton being about what they realised latterly, whereas now about 12*l.* to 13*l.* can be got for similar ore. The Rookhope Company also paid 1-9th and 1-11th dues, but the Northern Company have got these reduced to 1-18th for two years, and after that probably not exceeding 1-15th. Any further information can no doubt be obtained from Mr. Murchison, 8, Austinfrans, E.C. A considerable number of the shares have been already applied for.

DIVIDEND MINES OF 1879.—Mr. Ashmead, 62, Cornhill, informs us that his FIFTH ANNUAL STATISTICAL TABLE is near completion for our *Journal*. One or two secretaries have not given him the information asked. Will they do so forthwith?

## CAPPER PASS AND SON, BRISTOL,

ARE BUYERS OF

LEAD ASHES SULPHATE OF LEAD, LEAD SLAGS, ANTIMONIAL LEAD, COPPER MATTE, TIN ASHES, &c. and DROSS or ORES containing COPPER, LEAD, AND ANTIMONY.

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MANGANESE, ARSENIC, FLUOR-SPAR, WOLFRAM, BLENDE, CALAMINE, CARBONATE AND SULPHATE OF BARYTES, ANTIMONY ORE, CHROME ORE, MAGNESITE, EMERY STONE, PUMICE STONE, COBRES AND UMBERS, CHINA CLAY, LEAD ORE FOR POTTERS, TALC, PHOSPHATE OF LIME, &c.

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(LATE EVANS AND ASKIN),

NICKEL AND COBALT REFINERS, BIRMINGHAM

## C. H. WALKER AND CO.,

MINING AGENTS AND ENGINEERS VALPARAISO AND SANTIAGO, CHILE.

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Assays or Complete Analyses made of Copper, Silver, Lead, Zinc, Tin, and other Ores. ASSAYING TAUGHT.

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A CERTIFIED MANAGER, having had large experience in COAL and IRONSTONE MINING, is OPEN to RE-ENGAGEMENT. First-class testimonials. Address, "Ironstone," MINING JOURNAL Office, 26, Fleet-street, London, E.C.

NOTICE.—I, RICHARD GREGORY, of 26, WOOLSTER STREET, PLYMOUTH (late of 48, George-street, Stonehouse), Mining Engineer, hereby give notice that the ANTI-FOULING COMPOSITION, patented by Henry Allington Harvey, of Plymouth, Patent A.D. 1878, July 17, No. 2846, is NOT THE INVENTION of the said Henry Allington Harvey, the receipt for the said Composition having been obtained from me by him for the purpose of enabling him to make experiments to test it under an agreement which he proposed to enter into with me for making and patenting such Composition. Dated 1st January, 1880. RICHARD GREGORY.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—I am surprised to find someone signing himself "S. W." advertising for my whereabouts; and still more so that you should have inserted such an advertisement so peculiarly and objectionably worded in your *Journal*. As some step towards reparation for the injury you have done me, perhaps you will be good enough to let this letter appear in an as equally prominent part of your *Journal* as the offensive advertisement I have referred to. 6, Cambridge-terrace, Dawes-road, Fulham, JOSEPH H. DAY.

FOR SALE, the WHOLE or PART:—  
100 Bettws-y-Coed, 15 Pant-y-Mwyn, £2. 2 Carn Brea, £79.  
£1 2*s.* 25 Ruby (Gold), £56*s.* 3*d.* 20 East Caradon, £2 16 3  
50 East Crebber, £1. 50 Flagstaff, £2 2*s.* 6*d.* 20 Devon Consols, £9 10*s.*  
50 Don Pedro North del Rey, 16*s.* 50 Parys Corporation, 50 Bedford United, 8*s.* 6*d.*  
50 Bwlch United. £1 12*s.* 6*d.* 50 Pr of Wales, 12*s.* 6*d.*  
Wanted to PURCHASE—200 Gawtons, at any price.  
Address, H. WILKINS, 3, Heybourne Villas, Tottenham.

FOR SALE, a FREEHOLD PROPERTY, containing a deposit of GOOD BROWN HEMATITE IRON ORE, which can be mined and delivered into South Wales for about 7*s.* 6*d.* per ton. Apply to PAGEN and Co., Metal and Mineral Brokers, &c., 41, George-street, Plymouth.

MONEY LENT, at EIGHT, NINE, and TEN PER CENT., on FIRST MORTGAGE of FREEHOLDS for IMPROVEMENTS and STOCKING, said freeholds in the Province of MANITOBA. Address, HERBERT C. JONES, Solicitor, 20, Masonic Hall, Toronto.

MR. WILLIAM H. H. WATSON, DEALER IN RAILWAY STOCKS AND MINING SHARES at net market prices of the day.

Address: W. H. H. WATSON, 1, ST. MICHAEL'S ALLEY, CORNHILL, LONDON, E.C.



## Notices to Correspondents.

**INQUIRY.**—Can any of our readers kindly reply to the following questions?  
 1.—Was the mine in Laxey Glen, Isle of Man, now worked by the Great Laxey Company, first opened by the Foxdale Company prior to their renunciation of mining rights over that part of the island?  
 2.—In what year was the first independent company started to work the mine, and if more than one company ever worked it prior to the formation of the present Great Laxey Company, in or about 1855 or 1856?  
 3.—When was the Mona Mining Company started to work mines on a sett at Ballaglass, and between that place and the sea?  
**Received.**—"J. W. T." (Baltimore).—"An Englishman" (Ouro Preto).—"J. B." (Birmingham).—The letter on Tin, referred to last week erroneously as having been received from Capt. Teague, was written by Capt. Tregay: it appears in another column of this day's Journal.—"Shareholder": There is evidently some mistake: see the secretary, who will explain.—"T. W. R."—Mining in Ireland.—No. III.: Conversation between a Father and Son: Next week.—The Visit to Phoenix and West Phoenix Mines shall also appear next week.—"J. W. P."—"A Mining Investor" (Derby): Had the letter on Bedford United been more legibly written it would have been inserted.

## THE MINING JOURNAL,

### Railway and Commercial Gazette.

LONDON, JANUARY 10, 1880

## THE DURHAM COKE TRADE.

Next to coal and iron one of the most important industries in the North of England is the manufacture of coke, although certainly not one of the oldest. The first coke made was from what was known as the six-quarter and the Blackwell seams at Garesfield, which belonged to the Marquis of Bute and Mr. BLACKETT. Previous to 1847, however, other collieries commenced the burning of coal into coke, and since then the production has grown immensely. About a quarter of a century ago, or a little more, the entire yearly make in all parts of the country was estimated at 2,500,000 tons, but now in South Durham the output is at the rate of between 4,000,000 and 5,000,000 tons annually. Last year the production will have been a little over 4,000,000 tons, but at the same time it must be said that during the last two or three months there has been a considerable increase in the production owing to the activity in the iron and steel trades, so that the present year will contrast favourably with the previous one, for more furnaces are being put in blast in nearly all parts of the kingdom. Amongst the largest producers are the Messrs. BELL, who raise from their pits nearly 1,000,000 tons of coal yearly, the greater part of which goes into the ovens, whilst at the Consett Works there are 150 ovens of the old beehive pattern, being 11 and 11½ ft. in diameter. The best coking coal in Durham will yield about 60 per cent. of coke, or perhaps a little more, and the inferior from 53 to 56 per cent. The annual output has been put down recently at 5,000,000 tons, but this evidently is too high an estimate, for Mr. I. LOWTHIAN BELL, one of the highest authorities, stated in 1872 that the quantity turned out then by the ovens was at the rate of from 3,250,000 to 3,500,000 tons a-year. The local ironworks consume a large tonnage, but a good deal is sent into other ironmaking districts as well as into Sheffield, where the hard-burnt, the costliest in making, being of good size and long in shape, is extensively used in putting round the melting pots in the making of steel. The coking coal field of South Durham lies principally to the west of the North-Eastern Railway, going from Bradbury Station to Gateshead—the northern limit—an area of more than 250 square miles. During the last two or three years efforts have been made to save the gases given off in the ovens, but the success so far has not been equal to what could be desired, and Mr. BELL informs us that in order to obtain (say) 3,500,000 tons of coke there was thrown off and burnt in the air a quantity of fuel represented in round numbers by 2,500,000 tons. That of course was not all wasted, for about one-half of the gaseous matter was burnt in the indispensable operation for conversion, leaving the other half waste. At several places now, however, those waste gases were utilised. The waste of fuel in the making of coke is becoming more serious as the years pass on, for if the consumption goes on increasing as it has done the exhaustion of the coal field will not take such a very long period, seeing that at the present rate of burning there does not remain in the coal field more than would last at most 120 years, so that as the increased make of pig goes on so will the final period approach when there will be no coal from which to produce coke. Yet in the make of pig-iron alone Mr. BELL says that he believes it is possible to save from 2,000,000 to 3,000,000 tons of fuel annually. The question of saving the waste heat is consequently an important one. To have good coke it is essential these gases must have a free outlet, and the ovens kept burning in the ordinary way. To effect a saving some ovens were built at the Brownley Colliery which have been most effectual. They were built in double rows back to back, but with larger flues than usual between them. To each chimney—116 ft. in height—were connected about 100 ovens, an equal number on each side, there being four flues and boilers, so arranged that the heat was carried past when cleaning or repairs was being carried on—the connecting flues being built compact and tight—so that there was great freedom from smoke, owing no doubt to the air-tight and perfect character of the flues, the small proportion of air present not cooling the gases to a point below by which the hydro-carbons escaped imperfectly burnt. This was shown to be the case by admitting the air, when smoke was at once seen. By the arrangement no coal whatever was used for the boilers, and the produce of the pits was drawn from a depth of 600 yards and the water pumped, for which purpose before the new system was adopted 600 tons per fortnight were wasted. The amount of heat available for evaporative purposes was found to be very large. Mr. STEVENSON, of Durham, a short time since, in noticing the ovens alluded to, gives the result of 50 of them coking at the rate of 230 tons of coal in 84 hours, which yielded about 50 per cent. of coke, composed of 132.7 tons of carbon to 5.3 tons of ash, and found that the composition and weight of the material lost in coking was—Carbon, 62.6 tons; hydrogen, 10.3 tons; nitrogen, 2.3 tons; sulphur, 1.4 tons; oxygen, 15.3 tons.

The heat wasted was equivalent to evaporating 415.0 tons of water at 212° Fah.; but owing to the fact that the temperature of the gases was only reduced 75° instead of 1140°, the above quantity was reduced to about one-half, the quantity evaporated in one hour being 2.4 tons. The total theoretical heat actually developed in the process of coking at the above rate was equivalent to evaporating 17 tons of water per hour, which was expended as follows:—Heat utilised by boilers, 2.4 tons; heat escaped in chimney, 2.54 tons; heat lost in reduction from ovens and flues, and watering coke, 12.06 tons: total, 17.00 tons. With the small amount of heat so utilised there was a marked saving, showing what could be effected were greater attention paid to the manufacture of coke, more especially as regards the construction of the ovens. In allusion to this Mr. STEVENSON says were even so small a percentage of the heat generated in the ovens utilised and carried out throughout the whole of South Durham, where in colliery boilers not more than 6 lbs. of water on an average was evaporated per lb. of coal, there would be a saving of 1,085,869 tons of coal per annum, or a money value of 270,000l.; but this would by no means represent the total saving to the colliery owners, for foremen would be entirely abolished, with the exception of one man on each shift to attend to the boilers, so that the total economy which would be effected were the system generally adopted in Durham would be fully 300,000l. per annum. At several places the coal is crushed into powder before going into the oven, and this has been found beneficial, producing a larger percentage of coke with less refuse, whilst in some instances it is both crushed and washed, the washing being done in troughs, with ledges to stop the sand and dirt, being constantly stirred up with rakes. The total number of ovens in operation will be close upon 14,000, in which will be invested upwards of a million sterling. The time necessary for the burning process varies considerably. An oven charged lightly for 24 hours carbonisation—charging, burning, and drawing inclusive—will occupy in

combustion 18 or 19 hours; if charged for a 48 hours' operation, with a heavier load, combustion will occupy from 30 to 32 hours. But these short hours are for a material for a specific purpose. The coke made for shipment or for smelting, and having regard to appearance and quality, will take from 72 to 96 hours in combustion, and even as much as 120 hours—in the latter time the coke is much harder, more compact, and silvery looking. Some of the Durham coal when crushed yields as much as 60 per cent. of coke, and in the ovens in the North the coke that was burnt the fewer hours for blast-furnace purposes was inferior to that burnt for a longer period, owing to its not being so easily oxidised in carbonic acid. The old beehive appears still to be the favourite type, the Belgian process as yet, at least, not having found much favour from the ironmasters, although it has been adopted with considerable success in other districts. At the Messrs. BELL's, however, an Appolt oven was tried, the advantages claimed for it in Belgium, where many of them have been erected, being that the calcining is effected in a close chamber solely by the combustion of gas disengaged from the coal, a condition considered favourable to a high yield, the comparatively small size of the retorts securing a rapid and regular carbonisation, uniformity of temperature, whilst the vertical position of the compartments, with the facility for rapid charging and emptying, gave more compactness to the coke, and the arrangement occupying less space. At Messrs. BELL's, however, the oven made a very hard coke, but the watering of the coke outside was so prejudicial to the economy of the blast-furnace that it was abandoned. Efforts were also made to save the ammonia and tar contained in the gases, and large sums were expended in the attempt, but the coke was so much injured by the process that what was gained in one way was more than counterbalanced by the loss in another. The coke in Durham is of the annual value of more than two millions sterling, and requires about 2000 drawers, and it is to be hoped that the views of Mr. I. LOWTHIAN BELL as to the saving he thinks it is possible to be effected in the consumption of fuel in the making of pig will, at least, be realised in part.

## IRON TRADE PROSPECTS.

It must be admitted that the prospects of the coal and iron trades continue good. We link these trades together because they are so inseparably associated with each other that it is next to impossible to deal with them separately. The latest intelligence from the metallurgical centres of the United States speaks very hopefully of the revived activity which prevails in almost every branch of the American iron trade, and especially in the demand for railroad material. The animation which at present characterises the American railroad appears to a large extent legitimate, as a considerable and lucrative business is being transacted upon almost every one of the leading American lines. Dividends are beginning to reappear upon stocks which not many months since were at an apparently hopelessly low ebb; and, of course, the effect of this is very great in stimulating the construction of new lines and the improvement of existing ones. Speculators may be—and very likely are—overdoing it just now upon the markets of the United States; still as regards railroads and railroad construction there is a good deal to be legitimately said in favour of the buoyant feeling which has gradually arisen. In other words, although it may be true that there is just now a speculative tone about American commercial life there is a good deal to back up this speculative commercial tone, and give it strength and vigour.

The effects of the revival—or rather the renewed revival—of the American iron trade are already apparent on this side of the Atlantic. At the close of last week Scotch pig had attained a quotation of 68s. per ton, while No. 3 Cleveland pig was quoted as high as 59s. per ton for delivery three months hence. When we remember the miserable level to which the price of this No. 3 Cleveland pig was reduced half a year since the change appears almost magical, and beyond the bounds of comprehension. In 1879 the make of Cleveland pig sunk to 1,776,000 tons; but this total is expected to be considerably exceeded in 1880, as several blast-furnaces were re-lighted in the last quarter of 1879, while as many as 25 more are expected to be blown in during the ensuing three months. Should this anticipation be realised it is obvious that a very substantial addition will be made to the weekly make, and that the output may get back without much difficulty to the 2,000,000 tons, which are now considered a good average year's work for Cleveland.

We cannot, however, shut our eyes to the fact that any great further advance in the price of iron—and such an advance appears to be quite within the bounds of possibility upon both sides of the Atlantic—would have a very chilling and depressing effect upon the colonial and general demand for our iron, and would probably be followed by a reaction in quotations and profits. One of the misfortunes of our times appears to be that we are becoming more and more dependent upon the United States. Not only have two out of every four loaves consumed in Great Britain during the last four months come from the United States, but the wherewithal to pay for them has also come, to some extent, from the same quarter. We weep with the Americans when they weep, and we rejoice with them when they rejoice. When times go well with the Americans they go well with us also, and when times go badly across the Atlantic we sink into something like a slough of despond. But all this is an unmistakable misfortune. We lose our independent volition under such circumstances as these, and we are hurried away we know not whither. Notwithstanding the prevalence for a time of a vertiginous activity in the United States, British prosperity to be lasting must be dependent upon British resources and British commercial connections; and to keep our business *clientèle* together we must not forget the indispensable importance of producing cheaply.

## THE PRODUCTION OF STEEL RAILS.

The production of steel rails in 1879 was undoubtedly the largest which has yet taken place in any one year since the Bessemer process was first commenced, whilst prices underwent extraordinary changes. Makers were kept fairly going during the first half of the year, but considerable impetus was given to the trade by the large orders given on American account in the second half. The first order was for 10,000 tons, at the low figure of 5l. a ton loaded, so that despite a duty of 7l. per ton the English makers were able to beat the Americans. This was principally on account of the known superiority of the English steel rails, which were guaranteed to last twelve years, whilst the American manufacturers declined to give a guarantee for more than five years. Our superiority has also been the means of Russia being a good customer, for the rails sent there are severely tested, and have to be made longer than usual, most of them being 24 feet in length—somewhat longer than the carriages. They are considered more economical than short ones, and this is also the opinion of the engineers of some of the American lines, where some of the steel rails are 30 feet long. In Russia, owing to the peculiarity of the climate, the rails are required to be of greater solidity than usual, and with greater resisting power than those required for other countries. One of the Russian tests is to place a rail on supports 3 feet apart, and bearing a weight of 16½ tons for five minutes, when it must not give way more than 0.15 of an inch, when after undergoing that test and the load withdrawn the permanent bend should not be more than 0.15 of an inch.

The annual productive power of the rolling-mills in the kingdom engaged in the making of steel rails is estimated at 750,000 tons per annum, and during four or five months makers were taxed to the utmost to meet a somewhat sudden demand for both home and foreign lines. This, of course, led to an increased consumption of hematite pig—so that the ironstone mines in Cumberland and Lancashire, which had been particularly quiet, became active, and prices of ore doubled in a short time, some of the former going as high as 25s. per ton, whilst the average for 1878 was only 13s. per ton. As a consequence smelters at once advanced their rates of best pig to more than double what it had been, 100s. per ton being realised. Rails soon went up in the same proportion in all new contracts; but, unfortunately, many makers had extensive orders on hand at the old prices—something below what they had to pay for the raw material. So that, taking things altogether, the advance obtained during the last three or four months of the year in all probability would not more than counterbalance the losses that would be sustained on the old contracts.

British India, Australia, Brazil, and America have been good customers, whilst, considering the extent of Sweden and Norway, a considerable tonnage was also sent to those countries. Our own railway companies have also been larger purchasers than usual, for there has been a strong feeling that high as are the prices they will still go up. At the close of the first half of the year prices ranged from 47. 15s. to 47. 18s. per ton, whilst at the end of December they had gone up to from 87. 3s. to 87. 5s. per ton. This rapid rise, it may be said, is unprecedented in the history of the rail trade; but it is undoubtedly the result of the sudden demand, and the knowledge that all railway engineers have of the value of steel rails as compared with those made of iron. They have found from experience and close inspection that the life of a steel rail is at least five times greater than that of an iron one, and that whilst the wear caused by friction in the former is even and running parallel with the length, which process goes on slowly, those made of the inferior metal are done up before they have lost any appreciable portion of their weight. Rolled steel is also of greater and more regular resistance than iron. In some experiments made it was found that iron rails did not present a mean resistance exceeding 2893 foot-pounds, whilst the steel rails by the same test exceeded 6590 foot-pounds. Considerable change has also taken place in the length and weight of the rails on some of our own lines of railway. To meet the increasing strain of heavier and faster trains now become necessary the Midland Railway Company have adopted a much heavier rail than formerly. Some of those being made for that company are upwards of 80 lbs. to the yard, whilst not so long ago 60 lbs. were considered as a good weight even on lines where the traffic was heavy. This heavy rail is also rendered necessary by the greatly increased weight of the locomotives, and the increased length of them and the carriages. It may, therefore, be fairly assumed that in the future renewals of our permanent way on our own lines the rails will be much heavier than they have hitherto been, and there is every reason to believe that the change will be an economical one. As regards the production during the last year Sheffield, of course, takes the lead, there being five large firms or companies engaged in their production, including Sir J. Brown, and Co., Brown, Bayley, and Dixon, and Cammell and Co.; while the North of England is extending operations in the rolling of Bessemer rails, and plant is also being put down in other well-known ironmaking districts. It may, therefore, be assumed that 1880 will be the most prosperous year known in the history of the steel rail trade of the country.

## THE ROYAL SCHOOL OF MINES AND THE SCIENCE AND ART DEPARTMENT.

The abuses which unhappily appear to be inseparable from the Science and Art Department have led to such frequent collisions between that body and those engaged in and capable of extending the knowledge of the subjects the study of which the Department was intended to encourage, that complaints are, as a rule, classed by the public as inevitable, just as the reckless collier looks upon the presence of fire-damp in a mine as one of those dangerous inconveniences which, although it places his life at stake, is so familiar to him that it is useless to take notice of it. But even the collier is sometimes led to the conclusion that increased care and improved methods of mining are worth thinking about when a first-class explosion occurs, killing a few hundred of his comrades; and in the same way the recent step (it would be unsafe to say the last step, owing to frequency of the erratic movements) of the Department has created a widely-extended feeling that the time has come when the long-continued abuses should be eradicated, and when the Science and Art Department, which costs the country nearly 40,000l. a year, should be made of some practical utility to those for whose advantage it was created.

Apart from special consideration the removal of the Metallurgical Department of the School of Mines from Jermyn-street to South Kensington would really not be worth writing about, but as a matter of fact such removal is really introducing the thin edge of the wedge for breaking up and practically annihilating the Royal School of Mines as a special school. The letter of Dr. PERCY, published in last week's Journal, throws a large amount of light upon the question, but does not go sufficiently far, though it may be hoped that in the further letters which he promises such ample details will be given that all the questionable proceedings of the Science and Art Department will be brought so clearly to view that every one interested in education will have data for discussing the whole matter point by point. The necessity for an English School of Mines to enable us to keep pace with the continental powers possessing similar institutions was exhaustively discussed before the School was established, and Dr. Percy's letter in last week's Journal gives a history of the school, which shows that in spite of the obstructions which have constantly been offered by certain Government officials the Royal School of Mines has performed useful work, and has conferred lasting benefit upon the most important industries of the country.

The attempt to annihilate such an institution at a single stroke would have been a too Herculean task for any official clique, and hence it is that attacks upon distinct branches separately and under-hand practices during parliamentary vacation have had to be resorted to. And here it should be thoroughly understood that the Royal School of Mines must not be confounded with the Geological Survey (in connection with which the abuses are as numerous and as glaring as in any other branch of the Science and Art Department), although the Survey, the Museum, and the School have usually been under the control of one man. Some interesting disclosures connected with the Geological Survey will be made at an early opportunity. But to return to the Royal School of Mines. Dr. PERCY has shown that Prof. HUXLEY, choosing to remove to South Kensington, was really no loss to the school as a School of Mines, and the manner in which the creation of lobsters and crayfish is connected with mining is probably not very apparent to the general public. Prof. JUDD's removal was perhaps more regrettable, but the fact of his having been newly appointed and therefore not quite in a position to resist, may be assumed to relieve him from the odium of willingly playing into the hands of the clique.

That the general system of science and art teaching inaugurated and sanctioned by the Department is a lamentable failure is too well known to need demonstration, the utility of the information possessed by those who have earned South Kensington honours being well characterised by the cruel satire recently published by one of the comic newspapers in describing a Board School pupil as applying for employment as a servant of all work, and affirming that she held honours in "physical geography, phiziology, and free and dromin," but was totally unacquainted with the use of pails, brooms, or other apparatus of the kind.

The holders of South Kensington honours are seldom heard of after the award, the obvious reason being that those honours are obtainable more readily by a temporary effort of memory than by the possession and careful development of intelligence. This, however, is a subject which must be discussed separately, for it is not only the system of examination that is at fault but the practice of permitting the examiners to introduce and virtually compel the use of text books of their own, and thus secure the profits of publication as well as the salaries of their office. This is the more objectionable when, as in the case of the chemical text book, peculiarities and eccentricities of no practical value are inserted, a knowledge of which is essential to a pass. Dr. PERCY has opened a very important question, and may depend upon the hearty co-operation of the *Mining Journal* to secure a thorough investigation.

**STRAITS TIN.**—Some interesting statistics have been given by Dr. Rayer on the tin production of the Banca and Billiton Islands. The island of Banca, which is a continuation of the mainland of Malacca, is of granite, grading into syenite and flanked by Silurian slates and quartzites. The ore was worked here to a considerable extent during the last century by the Sultans of Palembang, the yield having reached 4000 tons per annum. This production afterwards fell off very much, and when the Dutch obtained the island, in 1821, it did not amount to half that quantity, although it now surpasses it—1820-29, 1500 tons; 1830-39, 2700 tons; 1840-49, 4100 tons;



1855-59, 5200 tons; 1860-69, 4700 tons; 1870-77, 4400 tons. The average annual amount of tin per mine does not exceed  $\frac{1}{2}$  ton, though the washings at Blinje average 1 ton per annum. The island of Billiton, as a tin mining district, only dates from 1850, the yield for the first ten years being only 180 tons. Since then, however, it has risen so rapidly that between 1870-6 over 3600 tons were raised per annum. The population of Billiton has increased from 14,000 in 1860 to 28,000 in 1876; of these a good number consisted of Chinese miners. There were only 400 of these in 1860 and 4300 in 1873.

**THE FACTORY ACT AND CORNISH MINES.**—At the time the Mines Regulation (Metalliferous) Act was passed the whole question of the employment of children about metalliferous mines was fully discussed, and it was believed that a compromise had been arrived at, which, whilst thoroughly protecting the interests of the children, did not seriously interfere with the working of the mines. It appears, however, that the Factory Act, 1878, is assumed by the authorities to override this compromise, and, acting upon this view, an attempt is being made to enforce its provisions in a manner alike prejudicial to the children and their employers. Under the Mines Regulation Act the employment of children was permitted after the age of 12 years; but it is now declared that the Factory Act, 1878 (although all reference to mines appears to have been most carefully avoided), by mentioning pit-banks, which was evidently intended to include only collieries, is applicable in Cornwall. The result is a most disastrous one, and the Mining Institute of Cornwall, the necessity of which is again shown by the facility which it offers for organisation in matters of this kind, may well be congratulated upon having taken up the matter with energy and determination. The evil of the Act will be at once understood when it is considered that the effect of its application will be to compel the tin streamers and clay workers to discharge children under 14 years of age; and as they must give a half-holiday on Saturday to any employed there will practically be two days loss of work. On the Saturday afternoon it is usual to prepare the slimes for Sunday's burning, so that there may be work to go on with on Monday morning. If the Act be enforced this work will have to be done on Monday, and the regular work can only commence on Tuesday morning. The Mining Institute, as will be seen by the advertisement in another column, have convened a meeting to be held at Truro, on Jan. 22, in order that the question may be discussed and the necessary steps taken for securing a repeal of the Act, at least so far as metalliferous mines are concerned. The matter is one of such paramount importance that it is sincerely to be hoped that all will give their hearty support, which, with the excellent case the Mining Institute have to put forward, will ensure success.

**COLLIERY MANAGERS' CERTIFICATES.**—The names of the candidates who were successful in passing the recent examination at Manchester for colliery managers' certificates in the districts of North and East Lancashire and Ireland (Mr. Dickinson's district) have just been received from the Home Office. The examination was conducted by Mr. J. Waddington, Burnley; Mr. J. Ridyall, Bolton; and Mr. Herbert Fletcher, Bolton; and there were 64 candidates, of whom 16 only were considered entitled to be awarded the certificates. The following are the successful ones:—

J. Cunliffe, 69, Manchester-road, Walkden, Bolton.  
George A. Goodwin, Chapel-street, Hyde.  
Edward Greenall, Lamberhead Green, Pemberton, near Wigan.  
D. Haldane, 5, High-street, Wood Nook, Accrington.  
James Heyes, West Leigh House, West Leigh.  
William Howat, 55, Royds-street, Accrington.  
P. Lea, 250, Park-road, Parr, St. Helens.  
E. G. Locke, Esk Colliery, near Durham.  
T. R. Maddison, Thornhill Collieries, Dewsbury.  
Thomas Marsden, 34, Nichol-road, Ashton, near Newton-le-Willows.  
R. C. Peake, Boldon Colliery, Newcastle-on-Tyne.  
John Robinson, Clifton and Kersley Collieries, Manchester.  
William Todd, Nunnery Colliery, Sheffield.  
S. B. Wells, 130, Bradford-street, Bolton.

#### REPORT FROM CORNWALL.

Jan. 8.—The New Year has opened as well as heart could desire. Business improved with its first hours, and ere the holidays were fairly over the share market was not only in a state of activity but of what may fairly be called excitement. Cornish mining is at length beginning to attract once more large quantities of outside capital, not merely in its speculative and least important but in its investive and most valuable character. There has been a marked advance in most of the leading tin mines since the year set in, and if we had now to repeat our calculation of the present selling prices of the leading mines we could not put the total at a less figure than a couple of millions. We are not at all surprised at the turn which affairs have taken. For some time past it is evident that shares, as a rule, have been unduly depressed, and now it has been shown by recent dividends what the actual results of the present condition of mining enterprise, unhampered by any portion of the evil times now left behind, is mining property is coming up more really to its legitimate value. Moreover, the smelters have taken "heart of grace," and given the Standards another lift of 3s. They might have done it days before and been none the worse, but their action is significant as expressing more confidence than they have yet shown (except by the more private and personal process of increasing their mining investments) in the future of the tin trade. They have now reduced the "margin," though it is yet too wide, to a lower figure than that at which it has stood since the improvement began. It was quite time for them to make a move. The feeling which we have again and again indicated in favour of home smelting is growing in strength, and the topic has been discussed at several of the recent accounts with more or less fullness and force. If the smelters wish to hold their own as middle men they must be prepared to meet the mines on more equal terms. In these days of extended trade, of railways, and of telegraphs the miner is in a very different position in regard to the metal broker and the general market than he was only a dozen years ago, and the demand for "free trade" in all matters of mining enterprise could be set up more effectively now than at any former period.

We were not able to comment at length last week on the hearty and spirited proceedings of the Mining Institute at its annual meeting, when Capt. Josiah Thomas succeeded Capt. Teague in the presidency. One of the most important points then introduced was brought up in a letter from Sir John St. Aubyn with regard to the stupid anomalies in the Factory Act, which allow, for example, a boy of 13 to be employed underground, and will not permit the employment of the same lad at surface. This is a point to which, it will be remembered, we have referred on several occasions. Sir John St. Aubyn, who was unable to attend, wrote:—"I particularly wished to come in order to arrange for the county members to meet a few of those interested in the working of the Factory Act, then to decide whether it would be necessary to call a general meeting or not. I have been personally to the Home Office on the subject, and have been in communication with the department since, and I wished to lay the results before a few of those interested, and take their opinion as to our future course. I am inclined to think that we shall be able soon to relieve ourselves of some of the principal difficulties complained of. Mr. Bolden has, with the authority of one or two gentlemen, put before me the views of those concerned in tin streaming, and I would suggest that you should ask him and a few others, whose names you will be in a position to select at this meeting, to meet the county members (as a preliminary meeting only), and at any time and place most convenient to yourselves."

No time was lost in acting on the suggestion of Sir John, and as a result a preliminary meeting of county members, mine agents, and other gentlemen intimately connected with Cornish mining, was convened by the council of the Mining Institute, at the Red Lion Hotel, Truro, on Friday last, with a view of considering the anomalies in the Factory Act, and discussing what steps should be taken to bring about amendments. Capt. Josiah Thomas, as president of the Institute, occupied the chair, and there were also present Sir John St. Aubyn, Bart., M.P., Sir Colman Rashleigh, Bart., M.P., Mr. John

Tremayne, M.P., Dr. Le Neve Foster, Mr. John Hocking, jun., Mr. M. Loom, Mr. Twite, Capt. W. Teague, Josiah Thomas, A. James, R. H. Williams, and Mr. T. B. Provis, secretary of the Institute. Sir John St. Aubyn laid before the members the result of his visit to the Home Office and the correspondence, and after some conversation it was decided to hold a public meeting shortly at Truro to discuss the question, and to pass such resolutions as would strengthen the hands of the representatives of the county in Parliament. It was left in the hands of the council of the Institute to fix the date of the meeting, and prepare such resolutions as were necessary and fitting. The anomalies of the Act and its oppressive action in regard to mining are by no means confined to the single typical instance we have quoted above, and they are so patent, and on the face of them so absurd, that under the able leadership of Sir John St. Aubyn we have little doubt that the protest which the county will make will be found effectual. There is a difficulty always in obtaining exceptional legislation, but here the legislature have clearly stultified itself, and there ought to be no difficulty in getting rid of regulations which are at once both anomalous and injurious. For one thing, in matters such as these, all the county members pull together.

Capt. Boyns, of Wheel Owles, is to have a testimonial—thoroughly well deserved—for the plucky way in which he has stuck not only to Wheel Owles but to mining generally, of which he has been the chief mainstay in the St. Just district. He never gave up hope in the hardest of the hard times, but kept up his spirits and those of his co-adventurers until the day of success dawned. It is astonishing what influence a few determined men like Captain Boyns can exercise.

Wheel Eliza has to be credited with just double the amount of dividend for last year assigned to it in the published list—the actual amount divided being 6656*l.*, besides a good balance of profit in hand. Wheel Eliza is in few hands, and comparatively little is known of the details of its doings; but quite enough is known by outsiders to congratulate Captain Williams and his co-adventurers heartily upon their prize, and to rank this thriving bal as a model mine.

South Caradon is repeating itself. All mining men of any experience, and acquaintance with mining history, recollect that it was the mere stroke of a pick that revealed the wonderful riches of this famous mine. Now another storehouse of treasure seems as suddenly to have been revealed, and the note of warning sent out by Captain Holman on Tuesday, advising shareholders to hold on, has been almost momentarily followed by the announcement that a new lode of great value has been cut, and this by a rise in the shares doubling and more the value of the mine. Only the low price of copper has kept South Caradon back of late, and no one can say whether this new addition to its already great resources may not carry it. Fortunately, South Caradon is one of the mines in whose management there is implicit confidence.

St. Just United has at length been started, and with every prospect of success, for it combines the old Cape Cornwall and the St. Just Amalgamated Mines. The question of mines smelting for themselves was brought to the fore here also, and by Mr. Borlase.

#### REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

Jan. 8.—Furnace and forge coal is in good demand. It is difficult to meet the requirements of buyers, and the terms which it is possible now to enforce are favourable to the trade in a larger degree than is indicated by the rise in prices, since the weights are more nearly approaching those which ought at all times to prevail. Best furnace coal is strong, at the advance of 2s. upon the late minimum. The rise of 2s. per ton in Cannock Chase coal has for the present checked the demand, and there is considerably less doing thereabouts than a week ago. The men are complaining that the rise does not give them 6*d.* per day more wages, but they are being quieted by the explanation that the advance comes upon reduced selling figures, consequent upon the heavy competition from Nottingham and Leicestershire. This competition is still severe.

At the Quarterly Meeting of the iron trade in Wolverhampton, on Wednesday, the uncertainty which we spoke of as prevailing last week in the pig-iron market was removed when the Lilleshall Iron Company lead the pig producers by declaring their price for hot-blast to be 4*l.*, and for cold-blast 5*l.* per ton. All sorts of finished iron remained firm at the rates quoted last week. Galvanised iron makers met and agreed not to book more orders until they shall have declared prices up 1*l.* This advance will be made known at the end of this week, and will make 24 w. g. 21*l.* in London, packed, and other sizes in proportion.

The ironmasters' Quarterly Meeting in Birmingham this afternoon was more numerously attended than for some years past. A fair amount of business was done, and very promising negotiations were opened. In the cases in which prices were not maintained at the rates of the Wolverhampton meeting they were advanced. All-nine pigs were quoted 4*l.* 15*s.*; Northampton pigs, 3*l.* 15*s.* Liverpool merchants sought to place heavy orders for wrought-iron for America. Galvanised singles sold at 11*l.*, stamping sheets were advanced another 1*l.*, and galvanised sheets 24-gauge were advanced to 21*l.* in bundles. Among the objects of interest exhibited in the hall were the stencilographic press for multiplying manuscripts; specimens of fire-clay bricks, glasshouse; pot-clay, &c., of Messrs. Harris and Pearson, of Stourbridge; Ransome's patent stone for building purposes; emery wheels and machinery, shown by A. H. Bateman and Co., and sundry specimens of ore and iron of special qualities.

The meeting of the South Staffordshire Mill and Forge Wages Board, which we mentioned last week, came off in Birmingham on Monday, when Mr. Joseph Chamberlain, M.P., the arbitrator, sat to hear a claim made by the men for an advance of 2s. 6*d.* per ton on puddling, and 25 per cent. on millmen's wages. After hearing the arguments on both sides, Mr. Chamberlain promised to give his decision at an early date. It was agreed to hold a meeting some time before April next, to settle the question of adopting a sliding scale of wages.

The Mines Drainage Commissioners, at a monthly meeting in Wolverhampton on Wednesday, heard with satisfaction from their Chairman, Mr. Walter Williams, that since the last meeting he had negotiated a loan of 8000*l.* for the Old Hill district, which was to be repaid out of the drainage rates of that district. Of this sum 1500*l.* had already been paid away, leaving 6500*l.* in hand. The Chairman also announced that he was treating for a further loan to the same district of 2000*l.*

The miners' representatives in South Staffordshire have decided to ask the colliery proprietors to concede an alteration in the sliding scale which now regulates the wages of miners, and which is known as the "Birmingham agreement." This agreement has been in force since 1877, and by it whenever the price of Thick coal is advanced 1*s.* per ton the men become entitled to an advance of 3*d.* per ton in their wages. It is understood that the concession to be asked for is that the miners' wages shall go up 4*d.* for every increase of 1*s.* in the price of coal.

#### REPORT FROM NORTH WALES, SALOP, AND CARDIGAN.

Jan. 8.—Mr. James G. Green, in his in many respects sensible letter of last week, is under quite a mistake as to my remarks about copper. I have not said that it will not be found in paying quantities in the older rocks of Cardigan and Montgomery, but that it will not be so found in the newer rocks of those counties—the Upper Silurian and upper part of the Lower Silurian. I have also shown that where the metal has been found in most abundance in these counties it is where the older strata are thrown up near the surface. Through the advance in the price of lead much more activity is discerned at the lead mines of the district, and now will come the time when by persistent economical work some money may be made by honest mining. A general advance is just taking place in the price of coal at the North Wales collieries, so that at last there is a chance of a return to remunerative prices. The slate quarries of the Festiniog district are now working six days a week. The trade has thus recovered its normal condition. Still there is not so much activity in the shipping trade at Portmadoc as one would wish to see.

The men at the Bethesda (Bangor) slate district, after being with-

out railway accommodation until now, are about to be doubly served. The London and North-Western Company are about making an ordinary gauge line, and since this has been decided on Lord Penrhyn is about to employ steam on his tramway from the quarries to the port, and permit his workmen to use the line. Two accidents have occurred in the slate quarries of the Corris district. Thos. Hughes at Abercwmdeiddau Quarry, and Evan Lewis at Braicsgoch, have both been badly hurt. Two or three of the landowners of Nantlle Valley are about to oppose the scheme for draining the quarries to which I referred a few weeks back. Landowners should remember that property has its duties as well as its privileges, and one of the duties pertaining to the possession of property is that of furthering works of public utility.

Mr. Hall, her Majesty's Inspector of Collieries, has addressed a letter to the colliery managers calling their attention to the appliances intended to prevent overwinding and accidents resulting from it, and it is to be hoped they will act upon his suggestion.

Among the other trades that have been depressed during the past year is that of shipbuilding in the Mersey. The trade has been almost entirely confined to small matters.

The Severn Commissioners, and the various interests connected with that river, are organising an opposition to the scheme for obtaining water from the upper part of the valley of the Vyrnwy for Liverpool. Last week, however, this river and the Severn overflowed their banks with flood water enough to supply half a dozen towns like Liverpool with water enough for a year.

#### REPORT FROM MONMOUTHSHIRE AND SOUTH WALES.

Jan. 8.—The men employed in the coal trade still manifest an inclination to form a sliding scale committee, but from several causes no scale has yet been agreed upon. For instance, at the meeting recently held at Cardiff the masters' representatives were present, and four delegates as representing the house coal men, but only one on behalf of the steam colliers. Matters will, however, probably be speedily arranged. Mr. Walker, who it is well known is connected with the new docks at Swansea, and other works in South Wales, has undertaken the completion of the Severn Tunnel. Another call of 5*l.* per share is to be made on the solvent shareholders of the West of England Bank; with the first call this will make a total of 15*l.* per share.

To speak of the Iron and Steel Trade one is able to again make a somewhat favourable report. The re-starting of Blaenavon will shortly be a matter of fact, and at the College Works, Llandaff, things are looking well. The advices from America are satisfactory, and this has led to an increase in quotations for rails. Probably the day is not far distant when one may see steel rails quoted at 10*l.* per ton, a consummation devoutly to be wished. Iron rails are now quoted from 7*l.* to 7*l.* 5*s.*, and steel about 8*l.* The demand for merchant iron is increasing to a considerable extent, while for pig-iron the demand is good, and fair prices are obtained. Old material sells at late rates, and is in good request. There seems to be no abatement of the demand on account of the United States. Clearances have been moderately good, and mainly to the quarter just named. There are still rumours with regard to the re-starting of the Pen-y-darwen Works, but none have yet assumed a definite character.

A meeting of Tin-Plate Manufacturers has been held at Gloucester, when it was agreed that the price of coke plates should be 30*s.* per box at Liverpool. The trade continues moderately brisk; but prices have not altered. As for the Coal Trade but little fresh can be said. The stormy weather last week to some extent impeded the movement of vessels; but generally a fair amount has been shipped, especially during the present week. There are some large contracts in hand, which are being rapidly pushed on with. There can be no change noted in quotations. The house coal trade is rather more active. The patent fuel department is somewhat dull; there are no extensive orders on hand. Both in the Rhondda and Rhymney districts there is a good demand for coke, and prices are improving.

#### THE TRADE OF THE TYNE AND WEAR.

Jan. 7.—The Coal Trade, on the whole, may be considered to be in a satisfactory state at the commencement of another year; at all events, the prospect is much improved as compared with the three previous years. Steam coal is still considered low in price, but most of the collieries are well employed, with a fair amount of orders in hand, and as the sliding-scale has been adopted by both owners and workmen, strikes and lock-outs are expected to be avoided. Coal lifters are not willing to contract under 10*s.* best and 9*s.* per ton seconds. Few contracts have, however, yet been entered upon, but they will, no doubt, be made shortly. There is a better demand for all second-class and small coals for manufactory purposes, and the local demand will release the export market of classes of fuel which during the great depression prevented the Durham colliers realising adequate prices for their produce. It is expected that gas coal will realise improved rates during the present year. At Tyne Dock the shipments of coal, and both exports and imports, have been below the average, the coal shipments having fallen off mainly on account of the holidays. The best gas coal and coking coals work are well employed, and the price of coke is gradually improving; the dispatch of coke from West and South Durham inland to the West Coast and Southern districts, is well maintained. Ramsay's coke is quoted at 18*s.*, Brancepeth at 19*s.*, and other qualities in proportion. This is for immediate shipment. The Wylam Hill Colliery is about worked out, and will be closed. The Walbottle Colliery is being reopened; this is one of the oldest coalworks on the Tyne, and it produces a good house coal, and also excellent clay for fire-bricks. Very little is doing in the two counties at present in sinking for new coal workings, but the sinking of the second shaft at Whitburn by the Chaudron boring process progress satisfactorily, and it is probable that a new shaft will also shortly be sunk by the Monkwearmouth Coal Company of Hendon. Although these deep sinkings near the sea margin in the counties are very costly, yet in the end they are profitable, as the seams at the points already proved are found in great perfection, and generally increased thickness. At Monkwearmouth part of the Bensham seam it is 9 ft. in thickness, and at Ryhope the seams are also good and large at the sea margin and under the sea bed. At Cambols, in the northern part of the steam coal field in Northumberland, the coals are also good, and large in section under the sea bed.

The general business of the New Year has commenced, and the prospects are considered to be very good, a cheerful tone prevails all round. The manufacturing iron trade on the Tyneside continues to improve, the great works of R. Stevenson and Co. and Messrs. Hawthorn have resumed work, and the reports from most of them, and from the great works in Gateshead, are satisfactory. Enquiries for fire-bricks and other fire-clay goods are coming in, and the spring shipments are expected to be good. The chemical market is firm and good, and makers are holding back for higher rates; this at the moment has checked business. The New Year altogether commences under very favourable circumstances for the manufacturers, most of whom are well sold for some time forward. Stocks are light, and there is every reason to expect a gradual improvement in prices.

The quarterly meeting of the North of England iron and allied trades was held on Tuesday in the Royal Exchange, Middlesborough. There was a large attendance. The effect of the publication of the official statistics showing the make and disposal of the Cleveland pig-iron had the effect of stiffening prices. It was found that the stock of Messrs. Connal and Co., the warrant storekeepers, amounted to 105,300 tons. They are receiving from 400 to 500 tons per day. Their warrants were in great demand, and were quoted at 57*s.* 6*d.* to 58*s.* per ton. In Glasgow their stock now stands at 421,753 tons. There was the usual accommodation afforded for persons wishing to exhibit articles of interest to the trade. Mr. T. Fenwick, of the Plating Company of Stockton, showed some splendid specimens of nickel plating. It may be stated that for engine work nickel plating is now extensively used. Messrs. Crossley, Ingham, and Co., of Middlesborough, exhibited specimens of bricks and sanitary pipes. At the commencement of the market No. 3 Cleveland pig was quoted 55*s.* 6*d.* and 56*s.* per ton, but at the close it was sold at 57*s.* per ton.



for delivery up to March. Makers, who are not at all anxious to sell, are asking 60s. per ton for delivery over next quarter. The preparations for re-starting blast-furnaces are being more vigorously carried on. In the course of a month or two the increasing output of Cleveland pig-iron will be very considerably enlarged. There continues to be a capital demand from America, and it is believed that it will be maintained. There is a further improvement in the finished iron trade, and prices have been advanced about 5s. per ton. Plates are quoted 97. per ton; puddled bars, 57. 10s.; bars and angles, 87.; and ship-plates, 87. 15s. to 97. During this month, in addition to the collieries and mines of Messrs. Charlton, which are to be sold by auction, the Loftus Ironworks will also be placed under the hammer. Engineers, shipbuilders, and founders find more enquiry, and within the next few months they will be very busy. With the exception of house coal, all kinds of fuel have advanced in price. For mill coal delivered the price is now 8s. 3d. to 8s. 6d. per ton, and 7s. is asked for puddling coal. Steam coal is 8s. per ton f.o.b., and coke is selling at 14s. and 14s. 6d. per ton. The prospects of steel making are again better. Trade generally is rather better, and people are more hopeful. It is hoped that the prices of iron, through speculation, will not be advanced to a much higher figure than is now ruling, but that gradually furnaces will be put into operation to meet the increasing demand, and that a steady trade will characterise the year.

The progress and improvement in the iron trade of this great district during the past year has been most remarkable. Taking the prices at the beginning and end of the year we have the following:—

First for pig-iron—	Jan.	Dec.	Increase—
Scotch warrants.....	£2 3 6 ...	£3 0 0 ...	£0 16 6
Middlesbrough.....	1 15 0 ...	2 10 0 ...	0 15 0
Hematite.....	2 17 6 ...	5 0 0 ...	2 2 6

It is here noticeable that the increase in the value of hematite far exceeds the increase in Scotch and Cleveland iron, and this has been brought about by the demand, first for Bessemer iron rails; this has, of course, increased the demand for hematite ore, and has had the effect of greatly increasing the value of that ore. The rise in manufactured iron is also great, Cleveland bars having risen from 57. 5s. to 77. 5s., and plates from 57. 12s. 6d. to 87. 5s. The Cleveland works have derived great impetus from the orders which have been placed for steam iron ships. The rise in cast-iron chairs has been from 27. 12s. to 37. 5s., and lead has risen from 147. 17s. 6d. to 187. 5s. 1d.

#### REPORT FROM DERBYSHIRE AND YORKSHIRE.

Jan. 8.—Trade has undergone no material change during the week, the New Year, so far, having opened out well. We have still to note a good demand for Derbyshire pigs for the mills in Staffordshire, as well as for foundry and other purposes in Lancashire and the West Riding. Stocks are not now allowed to accumulate, the existing prices, of course, being remunerative. In manufactured iron, also, there is more being done at the mills and works in the Erewash Valley, as well as in other parts of the county. Steel rails are in as good demand as ever, and prices of them have gone up from about 47. 15s. per ton, the summer rate, to 87. 5s., as at present; and there is more likelihood of their still advancing than otherwise. A good business is being done in house coal, and a large tonnage continues to be sent from Clay Cross, Eckington, Staveley, and other places to the Metropolis; but, contrary to what was generally expected, prices have not advanced with the New Year; but, on the contrary, during the last few days have declined 1s. per ton, so that Silkstones are now delivered to consumers in the Metropolis at 22s. per ton, and Derby Brights at 20s. Coal is also being sent to the West of England, whilst the Eastern Counties are also taking a considerable tonnage. Small coal does not go off at all well, but an increasing business is being done in coke for Sheffield and other places for smelting.

Trade in Sheffield goes on increasing in almost every branch, more particularly in mill material. Armour and ordinary plates for boiler makers and shipbuilders are being extensively turned out, whilst the production of steel-faced plates for vessels of war is likely to greatly increase. The iron plates with which many of the vessels in the navy are sheathed are now out of date, for they could not withstand the projectiles that are now produced, so that the Admiralty will in all probability resort to the new mixed plate, which has so many advantages over the old ones, besides those of less weight and displacement, which in themselves are important considerations. Bessemer rails are still in active request, and there appears to be a desire on the part of those connected with railways to order at the present time, high as the rate may be considered, as it is not unlikely that there will be an advance before long, seeing that hematite pig has again gone up, and is now higher than the rails were six months ago. Steel makers are also doing well, and there is likely to be a great demand for crucible steel during the present year. At the cutlery establishments business has become more active, and more is being done in files and saws, branches which are still capable of improvement. Malleable iron, it is said, is in better request at the extensive works of Messrs. Cowley, a firm noted for the fineness of some descriptions of castings, as well as for other material.

The Coal Trade of South Yorkshire continues in a favourable state so far as the demand is concerned, but colliery owners still complain of the low prices that prevail, and which are likely to continue, so that anything in the shape of profit is out of the question. This has been the state of things during the past year, and the books of many firms will show the balance on the wrong side of the ledger. Steam coal has in no way improved, and the price is still particularly low. A considerable tonnage of coke is now being made from small coal, which meets with a ready sale, a good deal being now sent to the furnaces in North Lincolnshire, as well as to Sheffield, in both places having superseded the South Durham coke.

At the Monk Bretton Colliery, near Barnsley, where the men have been out for more than three months, the strike still continues, with out any sign of an arrangement being come to.

A second Miners' Association, in which some of the lodges belonging to the old one in both South Yorkshire and North Derbyshire will join, is now being established, and is to have its head-quarters in Sheffield. Mr. Chappell, one of the late secretaries of the existing association, is to be the chief.

At the Chesterfield and Derbyshire Institute of Mining, Civil, and Mechanical Engineers meeting on Jan. 10, the following papers will be open for discussion:—Mr. A. H. Stokes, on Coal Winding in Deep Shafts; Mr. Arnold Lupton, on a few Observations on Winding Engines; Mr. John Beardsley, on the Ventilation of Mines; and Mr. A. J. Longden, on Brick Kilns. Additions are promised to the following papers:—Mr. D. P. Morrison, on the Application of Compressed Air to Coal Mines; and Mr. Herbert Phillips, on a new form of Safety Lamp. The following will be taken as read:—On Valve Gearing with Special regard to Winding from Deep Pits, by Mr. R. F. Martin, M.A.; and the Stephenson Memorial Hall, Chesterfield, by Mr. W. F. Howard; with drawings by the architects, Messrs. Smith and Woodhouse.

#### REPORT FROM THE FOREST OF DEAN.

Jan. 8.—We regret to have to report a decline in the local coal trade. Some account for it by reference to the milder weather which has taken place, others by reference to the advance of the price—a shilling a ton at the beginning of last month, making a total of 2s. per ton advance, whilst the Welsh pit proprietors have only advanced 6d. a ton since last summer's quotations. Others, still, account for the present local dulness by assuming that merchants have large stocks on hand, and, therefore, hold back in the hope and expectation of a reduction in prices. For ourselves, we believe that the difference in prices betwixt Forest and Welsh, and the change in the weather, have had far more to do in influencing or bringing about the present slackness, than any stocks which the merchants have on hand; as, had they had large stocks on hand from summer's supplies at summer's rates, they would not have been so ready and earnest in going in for fresh supplies at the first advance of prices. We, therefore, conclude that the reasons are supplies by the change in the weather, and the second shilling advance in prices. Of course, the fact that Forest coal costs more to cut and bring to bank furnishes an inducement on the part of Forest proprietors to advance the price of their coal whenever they have the chance; but want of business discretion in not duly weighing the probable effects on the market may defeat the very object which they have in view by checking the sale of the article which is the staple of their trade, and this change we have repeatedly directed attention to. It cannot be good policy to price themselves out of the market—which has

evidently been the tendency of the recent regulation of prices. In future it will be well for them to consider the competing trade of other coal fields, especially those of Bristol, Somerset, and South Wales.

The shoots at Sharpness Docks are said to be nearly or quite completed, and ready for active operations, and it is with much satisfaction we learn that one of our collieries (Crabtree Hill) has this week made a beginning of business at that place by sending in 200 tons of coal to be shipped from thence. It is too early to speak with much confidence about Sharpness, but if the Forest coalmasters make it worth while for shippers to deal with them, we cannot see why a good trade should not grow up at that place. And it will be in place here to refer to a correspondence in the Times respecting the strength of the Severn Bridge in consequence of the Tay Bridge disaster, and to note the satisfaction with which the letters of engineers have been received as to its safety. Further rumours respecting railway extension are afloat—that the Great Western Railway Company have made a beginning at Coleford for completing the line from Monmouth to that place, and that the company propose to cross from Coleford to the Mid-Forest line, and thus shorten the route to Gloucester and the Severn Bridge by a mile and five miles respectively. But although these changes are approved and desired by proprietors and others, we shall remain somewhat in doubt until events in Parliament make it more clear how far parties may be in earnest. All such proposed means of intercommunication would undoubtedly tend to develop the resources of the mineral wealth of the district, especially if the Great Western Company should carry out the proposed scheme by constructing a line from Mitcheldean-road to Newent and Ledbury, which would make the Forest much more accessible than at present. If all the railway extensions now proposed should be carried out ingress and egress to and from the district would be much more practicable than heretofore, but so many bogus schemes have been before the public that confidence wavers as to the realisation of the good things proposed.

The tin-plate trade is well placed for orders, and labour is in demand. The local iron trade is not in a satisfactory condition; it is said to have arisen from contracts having been taken at too low a figure, but which are said to be nearly out. It certainly appears to be a strange thing that the ironmasters of the North of England can pay a heavy freightage and undersell the Forest masters, who manufacture on the spot. There must be some unsatisfactory reason for such a state of things, which ought to be searched out and a remedy found to prevent its continuance. As post-time is at hand, we are bound to reserve any other remarks for a future communication.

GENERAL MARKETS.—Business has been rather brisk this week, and fluctuations in prices have been considerable. In the foreign market Peruvians have attracted chief attention, the Five per Cents at one time touching 18; the high figures reached, however, brought in sellers, and prices are, consequently, lower. Egyptians have been rather neglected all the week, but are better to-day. Argentine and Chilean stock are dull on rumours of a slight disagreement between the two Governments. There has been a good deal of business doing in Costa Rica, Uruguay, Paraguay, San Domingo, and other South American stocks, some of which have improved. Turks are lower, the impression caused by Lord Salisbury's speech to the deputation of 1853 and 1852 bondholders being unfavourable. English railways are rather uncertain. Two dividends have been announced, and more are expected shortly. The Metropolitan dividend is the same as at the corresponding period of last year—5 per cent., carrying forward 60000l.; the South-Eastern 7½ per annum for the ordinary, and 4½ for the A stock, carrying forward 15,0000l.; this makes with the previous half-year's distribution 5½ per cent. on the whole year on the ordinary, and 4½ per cent. on

the A stock, against 6 per cent. on each last year. Brighton, A. show a considerable improvement in price, being about 3 per cent. higher, in anticipation of a favourable dividend. North British have fluctuated a good deal, at one time touching 64½, it being believed that a large amount of stock would be thrown on the market at the settlement in consequence of the late heavy fall. Canals and foreign railways are rather dull and neglected, but American railways are in strong demand, especially Atlantic Great Western Mortgages, in which there is a very large speculation for the rise. Consols and Government funds firm. Mines have been very active, and a good rise has been maintained in several. South Caradons have risen from 70 to 150; Crebors are 8, buyers; Parys Mountain, 30s. to 35s.—W. H. H. WATSON: 1 St. Michael's Alley, Cornhill, E.C., Friday, Jan. 9.

WELSH GRANITE.—A small company is in course of formation to supply paving setts of this stone from a quarry within two miles of the shipping port of Portmadoc, in the county of Carnarvon. The stone is properly a syenite, and is especially suitable for paving purposes, inasmuch as it retains its rough surface, being in this respect superior to Aberdeen or Mountsorrel granite. The Welsh Granite Company, whose quarries are on the west coast of Carnarvonshire, have supplied over 100,000 tons of their stone to Manchester alone, and after 20 years experience of it the corporation there are still using it.

SOUTH DARREN.—The 110 end east has further improved, and is at present worth 2 tons of silver-lead ore, or 377. 10s. per fathom. It is the opinion of competent authorities that this run of ore is a new lode, distinct from that being worked upon west of shaft, and in this case there would practically be a new mine to be opened up in the eastern portion of the sett. The 100 west has also improved, and is now valued at 2 tons per fathom. The cross-cut in the 90 end has come into good lead, worth 1 ton per fathom, but the full width of the lode has not yet been ascertained. The monthly sale of 50 tons of lead this week realised 187. 4s. per ton, or 9107l., and the quarterly sale of copper, 50 tons, amounted to 2507l., making the total sale 11607l.

WEST KITTY is improving, and, as will be seen by reference to the report in another column, important points are coming off. The shares are being enquired for.

ALUMINIUM TELEGRAPH WIRES.—German telegraph engineers have lately been experimenting with aluminium as a material for telegraph wires. This metal can easily be drawn out to a very much finer gauge than is possible with iron, and its conductivity is twice as great as that of iron wire. Its excessive cost has hitherto prevented its use for the purpose indicated, but it is found that an alloy of aluminium and iron can easily be made, which will produce a wire both finer and stronger, and less susceptible to atmospheric changes, than iron wire, while it is much superior as a conducting medium.

The TRAMWAYS AND GENERAL WORKS COMPANY (Limited) offer for Sale at Par 21,000 of the fully paid-up Ordinary Shares of £10 each, in

## The Bordeaux Tramways and Omnibus Company, Limited,

The Capital of which consists of £350,000, divided into 10,000 Shares of £10 each, BEARING A PREFERENTIAL DIVIDEND OF 5 PER CENT. PER ANNUM, And 25,000 ORDINARY SHARES of £10 each.

#### DIRECTORS.

Lord RICHARD HOWE BROWNE, Reigate, Surrey.  
WILLIAM HENRY CLARK, Esq., 6, Leinster Gardens, W.  
PHILIP JULIAN CURTIS, Esq., 30, Chester-street, Grosvenor-place, S.W.  
ALFRED JAMES LAMBERT, Esq., Director of the Tramways and General Works Company (Limited).

#### BANKERS.

LONDON: THE UNION BANK OF SCOTLAND, 62, Cornhill, E.C.  
BORDEAUX: Messrs. LAFARGUE ET CIE., 2, Place des Quinconces.

#### SOLICITORS.

Messrs. PALMER, ELAND, and NETTLESHIP, 4, Trafalgar-square.

#### SECRETARY (PRO TEM.)

Mr. E. C. PRICE.

#### AUDITORS.

Messrs. COOPER BROTHERS AND CO., George-street, Mansion House, E.C.

#### OFFICES.

57, MOORGATE STREET, LONDON, E.C.

The concession for a comprehensive system of tramways and omnibuses for the City of Bordeaux having been offered for public tender in April last, the Tramways and General Works Company were adjudged the successful competitors for this important undertaking.

The concession is for a term of 31 years and 3 months from the 1st of January, 1880, and entitled the concessionaires to purchase the working stock and plant of the General Omnibus Company of Bordeaux, consisting of 145 omnibuses, 551 horses, and a large stock of harness and stores. This was effected on the 1st of November last by the Tramways and General Works Company, and the service of the omnibuses has since been worked by them.

The Bordeaux Tramways and Omnibus Company have provisionally purchased of the Tramways and General Works Company (Limited), the above concession, and the said working stock and plant, except 41 rejected horses; and the whole of the tramways specified in the concession are to be constructed in compliance with the conditions of the cahier des charges by the Tramways and General Works Company (Limited), who are also to supply 100 cars (75 of which are now being built at the well-known works of the Villette Company at Paris), and 400 additional horses, and are to convey certain freehold and leasehold lands, with the standing and other buildings thereon, and to erect additional stabling for the company's freehold land, so that the whole of the 950 horses may be accommodated on the freehold property of the Bordeaux Company.

The Bordeaux Company are also to receive the net profits on the working of the omnibuses from the 1st of November, constituting an immediate and considerable source of revenue, and also the caution money deposited by the Tramways and General Works Company—viz., 300,000 fr. (= about £12,000), of which five-sixths, or £10,000, will be released on completion of the undertaking, and the balance at the expiration of the concession.

In consideration of the above, the Bordeaux Company will pay to the Tramways and General Works Company the sum of £310,000, payable in 21,000 fully paid ordinary shares of £10 each, and 10,000 fully paid shares of the same nominal value, bearing a preferential dividend of 5 per cent. per annum.

The tramways will comprise a total length of about 38 miles, and are to be laid out to accommodate in the most complete manner the large existing traffic of the town, and to provide for its future development, the greater part of the system following the routes of the present omnibus services, which as the tramways are completed will be put on to adjacent and additional routes, and will serve as feeders to the tramways.

The average receipts of the omnibuses for the three years ending October 31, 1879, were about 53,0000l. sterling a year gross, as appears from the annexed report of Messrs. Cooper Brothers and Co., who have examined the books of the omnibus company, and that company, in addition to making large reserves, divided amongst its shareholders during that period no less than £22,900, notwithstanding the limited and contracted nature of the service, and its inadequacy to the increasing population of Bordeaux and its suburbs, already upwards of 258,000. The chief trade of Bordeaux is naturally that of its wines, and this, according to the last consular reports, has increased until the vintage of Bordeaux has, in the last 10 years, averaged a seventeenth of the total production of France; but fruits, sugar, sardines, and other similar products are also largely exported, while wool, coal, iron, wool and hides, and other articles of consumption, are imported to the estimated amount for 1877 of £8,000,000 sterling. From the same reports it appears that the value of the total trade of the port for 1877 is stated by the authorities at £21,250,000 sterling; the rate of increase for 1877, as against 1875 and 1876, having been over 11 per cent.; in the face of a decrease in the total trade of France of more than 3 per cent. In fact, the general trade of the town improves from year to year, and is likely to be much increased by the traffic of the extensive new docks recently opened.

The tramway and omnibus lines, as will be seen by the map accompanying the prospectus, bring all the residential portions of the city into direct communication with the ports and quays, the new docks, and railway depots, and all business quarters; access to the centres of amusement being equally provided for; so that the fullest accommodation is afforded for the passenger traffic; while the formation of direct junctions for goods traffic with the several railways, and the establishment of distributing depots for wine and merchandise, have been strongly urged in the local journals.

The plans for the lines of tramway have been passed by the Government engineer of Bordeaux (who by the terms of the concession has to inspect and

accept the whole of the work), and have been finally approved by the authorities in Paris. The lines will be laid with steel rails weighing 46 lbs. to the lineal yard, on longitudinal pitch pine sleepers, and the strict provisions of the concession constitute a guarantee that the whole system will be well and solidly constructed.

The rails are being made at the Terre Noire Foundry, near Lyons, and are in active course of delivery at Bordeaux. A supply of sleepers is also on the ground, and the laying of the lines was commenced on the 6th instant.

Not less than 1 per cent. on the actual amount of capital issued will be applied every year to form a fund, which will be invested in such securities as the Court of Chancery allows for trust funds, or such as may be similarly allowed in France, or in United States Government stocks, towards the repayment, at the expiration of the concession, of so much of the share capital as will not be represented by the value of the freehold and other disposable property of the company at that date.

January 8, 1880.

#### AUDITORS' REPORT.

14, George-street, Mansion House, London, E.C., 27th November, 1879.  
To the Directors of the Tramways and General Works Company (Limited).

GENTLEMEN,—We have examined the books and accounts of the Compagnie Générale des Omnibus at Bordeaux, and find the gross receipts from the omnibus services in the town and suburbs of Bordeaux, which have now been taken over by the Tramways and General Works Company (Limited), for the three years ending 31st October, 1879, amount to francs 3,972,982.47, being an annual average of 1,324,327.49, or £52,970.

We are, Gentlemen, yours faithfully,

(Signed)

COOPER BROS. and CO.

Applications for ordinary shares, accompanied by a deposit of £2 per share, must be made in the accompanying form to the secretary of the Tramways and General Works Company (Limited), at their offices, 57, Moorgate street, London; and the balance of £8 per share will be payable on acceptance of the application.

The only contract entered into by the Bordeaux Tramways and Omnibus Company (Limited) is the following, viz.:—A contract dated 7th January, 1880, between the Tramways and General Works Company (Limited) of the one part, and Lord Richard Howe Browne, on behalf of the Bordeaux Tramways and Omnibus Company (Limited), of the other part, a copy of which can be seen at the offices of the company, 57, Moorgate-street, London, E.C., and at the offices of Messrs. PALMER, ELAND, and NETTLESHIP, the solicitors of the company, 4, Trafalgar-square, London, S.W.

SALE OF 21,000 FULLY PAID-UP ORDINARY SHARES OF £10 EACH, IN THE BORDEAUX TRAMWAYS AND OMNIBUS COMPANY, LIMITED.

#### FORM OF APPLICATION TO PURCHASE.

To the Directors of the Tramways and General Works Company, Limited, 57, Moorgate-street, London, E.C.

GENTLEMEN,—Referring to the prospectus dated 8th January, 1880, offering to sell 21,000 fully paid-up Ordinary Shares of £10 each in the Bordeaux Tramways and Omnibus Company (Limited), I beg to offer to purchase ..... of such shares, and I herewith enclose the sum of £..... as a deposit of £2 per share, and I agree to accept such shares, or any smaller number you may sell me, and to pay the balance of £8 per share thereon upon your acceptance of this offer.

Usual Signature.....

Name in full.....

Address.....

Description.....

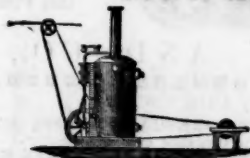
Date.....



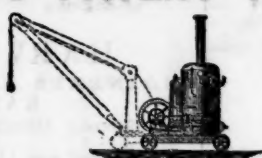
Represented by  
Model exhibited by  
this Firm.



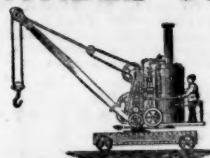
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No Building required.



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For Wharf or Rail.



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AND DISTILLER.



PUMPING AND  
WINDING ENGINE.

\* These Cranes were selected by H.M. Commissioners to receive and send away the Heavy Machinery in the International Exhibitions 1862, 1871, and 1872.

The ORIGINAL combined Vertical Engines and Boilers, introduced by Mr. ALEX. CHAPLIN, specially designed and adapted for PUMPING, WINDING, HOISTING, SAWING, DRIVING MACHINERY, and for GENERAL CONTRACTORS' WORK, RAILWAY SIDINGS, COAL MINES, QUARRIES, GAS WORKS, &c.

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WORKS:—REGENT'S CANAL DOCK, 602, COMMERCIAL ROAD EAST, LONDON, E. (Near Stepney Station.)

(2)

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WEST GORTON WORKS,  
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PARIS,  
BRONZE MEDAL, 1867.



ORDER OF THE CROWN OF PRUSSIA.



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A DIPLOMA—HIGHEST OF ALL AWARDS—given by the Geographical Congress, Paris, 1875—M. Favre, Contractor, having exhibited the McKean Drill alone as the MODEL BORING MACHINE for the ST. GOTHARD TUNNEL.

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At the south end of the St. Gothard Tunnel, where

## THE MCKEAN ROCK DRILLS

Are exclusively used, the advance made during eight consecutive weeks, ending February 7, was 24'90, 27'60, 24'80, 26'10, 28'30, 27'10, 28'40, 28'70 metres. Total advance of south heading during January was 121'30 metres, or 133 yards.

In a series of comparative trials made at the St. Gothard Tunnel, the McKean Rock Drill continued to work until the pressure was reduced to one-half atmosphere ( $7\frac{1}{2}$  lbs.), showing almost the entire motive force to be available for the blow against the rock—a result of itself indicating many advantages.

The GREAT WESTERN RAILWAY has adopted these Machines for the SEVERN TUNNEL; the LONDON AND NORTH-WESTERN RAILWAY for the FESTINIOG TUNNEL; and the BRITISH GOVERNMENT for several Public Works. A considerable number of Mining Companies are now using them. Shafts and Galleries are driven at from three to six times the speed of hand labour, according to the size and number of machines employed, and with important saving in cost. The ratio of advantage over hand labour is greatest where the rock is hardest.

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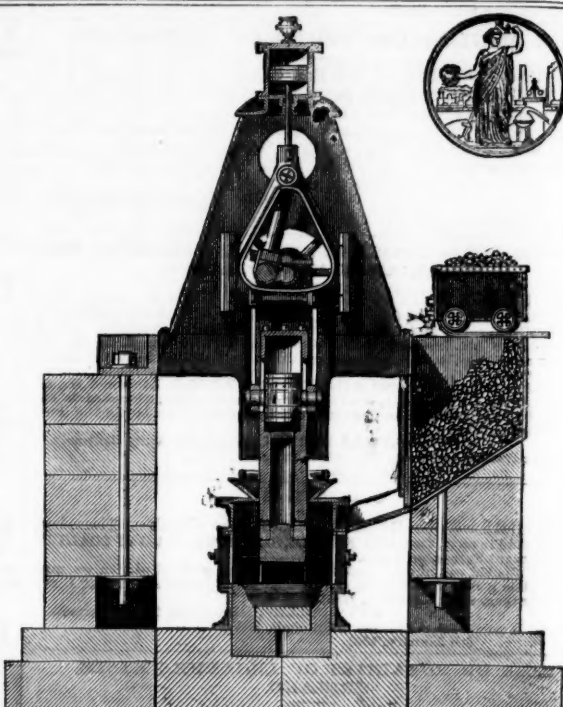
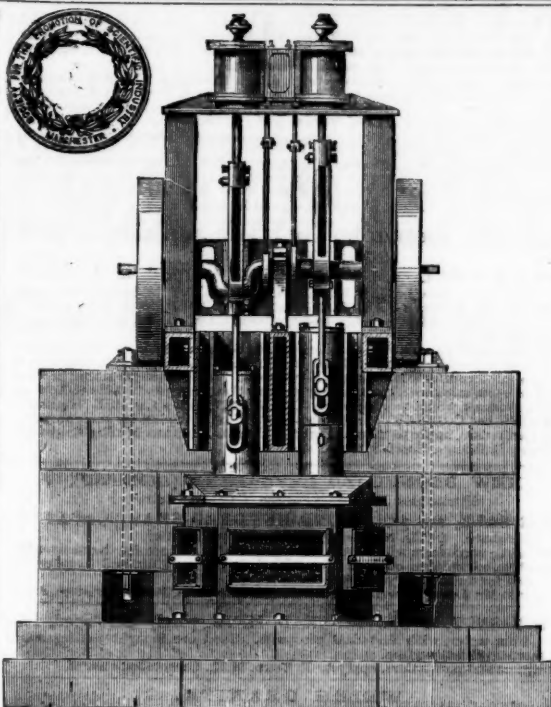
The McKean Drill may be seen in operation daily in London.

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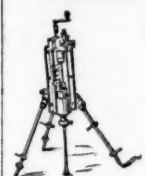
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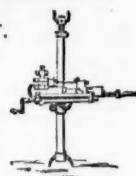
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[JAN. 10, 1880.

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NON-DIVIDEND MINES—continued.

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2400	New Cook's Kitchen, <i>t, Illogan.</i>	1 15	—	—
3000	New Gwynnawith, <i>s, Cardigan.</i>	5 0 0	5 1/2	6 1/2
8000	New Dolcoath, <i>c, c, Camborne.</i>	3 0 0	13 1/2	13 1/2
3500	New Tincroft, <i>t, c, Lelant.</i>	6 0 0	—	—
5000	North Alfred Consols, <i>c, Phillack.</i>	9 2 0	13 1/2	13 1/2
2000	N. O'reshy Mount, <i>s, t, bt, Carnarv.</i>	1 0 0	13 1/2	13 1/2
2000	North Molton, <i>c, c, St. Just.</i>	13 6 0	5 1/2	5 1/2
5000	North Molton, <i>c, c, St. Just.</i>	1 0 0	1	1
6000	North Penruthral, <i>t, c, Gwynnapi.</i>	1 10	13 1/2	13 1/2
2938	North Trekerchy, <i>c, St. Agnes.</i>	8 17 0	—	—
12000	Pandora, <i>s, t, Carnarvon.</i>	2 0 0	1	1
6000	Park Valley, <i>s, s, t, North Devon.</i>	0 4 0	3 1/2	3 1/2
6000	Parracombe, <i>s, t, Devon.</i>	0 5 0	—	—
45000	Parry Corporation, <i>c, Anglesea.</i>	1 0 0	13 1/2	13 1/2
7500	Pateley Bridge, <i>t, Yorkshire.</i>	1 0 0	3 1/2	3 1/2
2000	Pittito (also 7500 sh. not issued)	0 17 0	—	—
12000	Pennard, <i>s, t, c, t, Flintshire.</i>	1 0 0	13 1/2	13 1/2
5000	Penhalls, <i>t, St. Agnes.</i>	3 17 0	2 1/2	2 1/2
15000	Perran Consols, <i>s, t, Perran.</i>	1 0 0	—	—
12000	Phenix, & W. Phenix, <i>t, c, Link.</i>	5 10 3	5	5
8000	Plas Ddu and Park, <i>t, t, Wales.</i>	5 0 0	5	5
7000	Plympton, <i>s, t, Holywell, fully paid.</i>	1 0 0	3 1/2	3 1/2
6000	Piection Mining and Arsenic	1 0 0	3 1/2	3 1/2
10000	Plympton, <i>t, Llanidloes.</i>	2 0 0	6 1/2	6 1/2
10000	Pont, <i>s, t, c, t, Flintshire.</i>	2 0 0	2 1/2	2 1/2
2000	Prideaux Wood, <i>t, Llanvory.</i>	2 0 0	—	—
12000	Prince of Wales, <i>c, s, Calstock.</i>	0 7 6	3 1/2	3 1/2
5000	Rhydalun, <i>s, t, Mold.</i>	10 0 0	—	—
50000	So. Cambrian, <i>s, t, Cardiganshire.</i>	1 0 0	13 1/2	13 1/2
9000	South Darren, <i>t, Cardigan.</i>	1 10 0	3 1/2	3 1/2
30000	South d'Ereshy Mountain, <i>t.</i>	1 0 0	13 1/2	13 1/2
512	South Dolcoath, <i>c, t, Redruth.</i>	12 5 0	—	—
6000	South Roskear, <i>t, c, Camborne.</i>	8 5 0	—	—
4000	South Tolcarne, <i>c, c, Camborne.</i>	2 8 0	3 1/2	3 1/2
4000	South Wheel Crebor, <i>c, t, Calstock.</i>	0 0 0	13 1/2	13 1/2
2043	South Wheel Croft, <i>t, Illogan.</i>	16 7 9	9	9
6000	St. Lawrence, Amal, <i>t, Flintshire.</i>	2 0 0	—	—
2000	St. Patrick, <i>t, Halkin, Holywell.</i>	1 0 0	1	1
30000	Talybont, <i>s, t, Cardiganshire.</i>	1 0 0	—	—
4000	Tamar, <i>s, t, Bearsluston.</i>	1 0 0	13 1/2	13 1/2
6000	Teedale, <i>s, t, Durham (pref.)</i>	1 0 0	3 1/2	3 1/2
1000	Temple, <i>t, Cardigan.</i>	1 0 0	—	—
1000	Teign Wheel, <i>t, c, Redruth.</i>	1 0 0	—	—
12000	Trehellan, <i>s, bt, Cranstock.</i>	2 0 0	—	—
640	Truro, <i>s, t, Serquis, Flintshire.</i>	10 0 0	—	—
5000	Tyn-y-Fron, <i>s, t, Cardigan.</i>	1 0 0	13 1/2	13 1/2
5000	Ditto	0 7 6	3 1/2	3 1/2
10000	Van Cons. and Glyn, <i>s, t, Llanidloes.</i>	2 0 0	3 1/2	3 1/2
1000	Vaughan, <i>s, t, Cardiganshire.</i>	10 0 0	—	—
1000	Victor, <i>t, Flintshire (41 share).</i>	0 5 0	—	—
12000	West Assheton, <i>c, t, Carnarvon.</i>	1 0 0	3 1/2	3 1/2
6000	West Bassett, <i>c, Illogan.</i>	1 0 0	14 1/2	14 1/2
3000	W. Craven Moor, <i>t, Pateley Bidge.</i>	10 0 0	8 1/2	8 1/2
12000	West Goginan, <i>c, Cardiganshire.</i>	2 0 0	3 1/2	3 1/2
12000	West Holway, <i>t, Flintshire.</i>	1 0 0	13 1/2	13 1/2
6000	West Kitty, <i>t, St. Agnes.</i>	0 2 0	13 1/2	13 1/2
3000	West Mary Ann, <i>t, Menheniot.</i>	1 0 0	1	1
1000	Westminster Bog, <i>s, t, Llananm.</i>	5 0 0	6 1/2	6 1/2
20000	West Park, <i>t, t, c, t, Flintshire.</i>	0 0 0	2 1/2	2 1/2
1783	West Poldice, <i>St. Day.</i>	11 0 0	—	—
1000	Wt. Roskear, <i>t, s, t, bt, c, Camborne.</i>	5 10 0	—	—
2048	West Wheel Frances, <i>t, Illogan.</i>	29 6 3	20	20
3000	West Wheel Pevor, <i>t, Redruth.</i>	1 5 0	7 1/2	7 1/2
12000	West Wye Valley, <i>s, t, Montgomery.</i>	3 0 0	1	1
6000	Wheel Agar, <i>c, Illogan.</i>	13 15	6 1/2	6 1/2
6000	Wheel Agar, <i>c, Illogan.</i>	33 2 6	2 1/2	2 1/2
6000	Wheel Coates, <i>t, St. Agnes.</i>	2 0 0	—	—
2585	W. Comford, & No. Tre, <i>c, s, Gwynnapi.</i>	2 17 0	2 1/2	2 1/2
6000	Wheel Crebor, <i>c, Tavitock.</i>	4 8 0	7 1/2	7 1/2
5179	Wheel Grenville, <i>c, Camborne.</i>	4 15 0	4 1/2	4 1/2
2048	Wheel Jane, <i>t, Keaf.</i>	5 13 10	5	5
4295	Wheel Kitty, <i>t, St. Agnes.</i>	5 4 6	2 1/2	2 1/2
1000	Wheel Lwies, <i>t, St. Just.</i>	178 15	0 110	0 110
12000	Wheel Rall, <i>c, Calstock.</i>	10 0 0	6 1/2	6 1/2
1000	Wheel Stry, <i>t, Lelant.</i>	16 10	17 1/2	20 1/2
4098	Wheel Unity, <i>t, c, Redruth.</i>	15 6 0	1	1
3000	White Cliff, <i>s, t, Llanrwst.</i>	5 0 0	—	—
10000	Wye Valley, <i>s, t, Montgomery.</i>	3 0 0	3 1/2	3 1/2

\* Limited Liability Companies; † quoted on the Stock Exchange;  
‡ have paid dividends.

35500	Alamillos, <i>l</i> , Spain*†	2	0	0	2	—	1½	2	—	1	19	9	0	0	6	Oct.	1876
35000	Almadá and Tiro, Consol, <i>s</i> †	1	0	0	¾	—	¾	¾	—	0	6	3	0	0	1	May	1876
29000	Australian, <i>g</i> , South Australia†	7	5	—	2	—	1¼	1½	—	1	3	6	0	2	0	Aug.	1879
20000	Cape Copper Mining, <i>s</i> †, South Africa	7	0	0	38	—	35	37	—	36	10	0	0	12	6	Dec.	1879
35000	Cocoa, South, Co., W. Indies, Italy*	7	0	0	—	—	—	—	—	0	19	0	0	1	1	Aug.	1879
10000	Copiapó, <i>c</i> , Chili* (£20 share)	15	10	—	—	—	—	—	—	7	11	5	9	3	0	May	1877
21000	Eberhardt and Aurora, <i>s</i> , Nevada*	10	0	0	3½	—	2½	3¼	—	1	8	0	0	0	3	Dec.	1877
10000	English and Australian, <i>l</i> , <i>s</i> , Aust.	2	10	0	1½	—	1½	1¾	—	2	17	9	0	1	0	Mar.	1879
25000	Fortuna, <i>l</i> , Spain*†	2	6	0	6	—	5½	6	—	7	6	5	0	1	6	Sept.	1879
55000	Fontalé & Bolívar, <i>g</i> , New Gran.*	2	0	0	2½	—	2½	2½	0	0	3	6	0	1	0	Feb.	1879
15000	Linares, <i>l</i> , Spain*†	3	9	0	6	—	5½	6	—	17	14	10	0	2	0	Sept.	1879
10000	Pontingbad, <i>s</i> , <i>l</i> , France†	20	0	0	20	—	19	20	—	27	17	6	10	10	9	Dec.	1879
100000	Port Phillip, <i>g</i> , Clunes*† (£2 share)	1	9	0	¾	—	¾	¾	—	1	12	0	0	1	0	Mar.	1879
54000	Richmond Consol., <i>s</i> , Nevada*†	5	0	0	11	—	10¾	11¼	—	7	16	6	0	7	6	Nov.	1879
40000	Santa Barbara, <i>g</i> , Brazil	0	10	0	2½	—	2 2½	—	—	0	8	9	0	1	8	Nov.	1879
120000	Scottish-Australian Mining Co.*†	1	0	0	2½	—	1½	2½	—	15	p.	cent.	—	—	May	1879	
80000	— Ditto, New	0	10	0	1½	—	¾	1½	—	15	p.	cent.	—	—	May	1879	
22500	Sierra Guitierrez, <i>g</i> , Colombia†	2	0	0	1½	—	1½	1½	—	2	0	6	0	1	6	Apr.	1879
40625	— Ditto, Pinar, Europe	2	0	0	—	—	2½	2½	—	2	0	7	0	3	0	Oct.	1879
25000	St. John del Rey*† (£25 Stock and multiples dealt in)	—	—	—	—	—	255	285	—	—	12½	p.	cent.	for half-year, June	1879		
20000	Tolima, <i>g</i> , <i>s</i> , Colombia	5	0	0	—	—	—	—	—	0	19	0	0	7	6	Dec.	1879
25000	Victoria* (London), <i>g</i> , Australia	1	0	0	¾	—	¾	—	—	0	13	1½	0	0	7½	June	1879
2100	W. Prussian (5500 pref. sh. £10 p.)	10	0	0	10¼	—	10 10¼	—	—	2	2	0	0	0	8	Dec.	1879

§ Have made calls since last dividend was paid.

NON-DIVIDEND FOREIGN MINES; FOREIGN AND MISCELLANEOUS STOCKS; TRAMWAYS; INSURANCE COMPANIES; GAS, IRON AND COAL, WAGON COMPANIES, &c.

## TRAMWAYS.

Issue, Shares.		TRAMWAYS.	Pd.	Clas. pr.
40000	5	Anglo-Argentine [L] .....	all	44 44
10000	10	Barcelona [L] .....	all	104 10
140	10	Belfast Street Tramways .....	all	8 8
3050	10	Bombay, Ordinary .....	all	8 64
3050	10	Ditto, 6 per cent Preference .....	all	104 10
9290	10	Bristol [L] .....	7 1/2	8 8
3200	10	Chester [L] .....	all	104 10
24000	10	Dublin .....	all	124 10
14690	10	Edinburgh Street Tramways .....	all	14 1/2
35000	10	Glasgow Tramway & Omn. [L] .....	9	104 10
10000	10	Hughes Loco. and Tram. works. all .....	8 8	8 8
7500	10	Hull Street Tramways .....	all	114 10
3400	10	Imperial [L] .....	all	94 1/2
15000	10	Liverpool Unit. Tram & Om. [L] .....	all	11 1/2
15000	10	London [L] .....	all	104 10
15000	10	London Street Tramways .....	all	104 10
80000	16	North Metropolitan .....	all	154 10
8000	10	Nottingham and District [L] .....	all	94 10
15947	10	Provincial [L] .....	all	104 10
6000	10	Sheffield .....	all	84 1/2
5000	10	Southampton .....	all	104 10
6000	10	Sunderland [L] .....	all	8 8
10000	10	Swansea .....	all	54 1/2
16500	10	Tramways of France [L] .....	all	94 1/2
16500	10	Tripoli, Gen. & Prov. [L] .....	all	104 10
20000	5	Tramways and Gen. Works [L] .....	all	6 1/2
40000	5	Tramways Union [L] .....	all	6 1/2
25000	10	Vale of Clyde .....	6	44 44
7200	10	Wolverhampton [L] .....	all	10 1/2

TELEGRAPH COMPANIES.

Stk.	Stk.	PA.	Clon. pr.
Stk. Anglo-American .....	100	0 ...	5% 59
10 Brazilian Submarine .....	10	0 ...	7% 74
20 Direct United States Cable ...	20	0 ...	11 11 1/2
10 Eastern .....	10	0 ...	8% 84
10 East. Extern. Austr. and China ..	10	0 ...	8% 84
10 East. Northern .....	10	0 ...	8% 84
25 Indo-European .....	25	0 ...	23 24
10 Mediterranean Extension .....	10	0 ...	2% 3%
8 Reuters .....	8	0 ...	10 11
Stk. Cent. of New Zealand .....	100	0 ...	430 23 1/2
10 West India .....	10	0 ...	1% 1 1/2
20 Western and Indian .....	20	0 ...	5% 5%
11000 West. Union, p.c. Mort. Bonds	\$1000	120	125

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### MISCELLANEOUS

25 Australian Agricultural .....	21	10 ...	80 84
10 Brighton Aquarium [L] .....	10	0 ...	7% 74
Stk. Cent. of New Zealand .....	100	0 ...	10% 10 1/2
25 City of London Real Property ..	12	0 ...	2% 2 1/2
5 Diamond Rock Boring .....	4	10 ...	3% 3 1/2
16 Fore Street Warehouse [L] .....	14	0 ...	7 8

## WAGON COMPANIES

WAGON COMPANIES				
Shares.		£s.	d.	Clos. pr.
10	Birmingham Wagon Co. [L]	£10	0	15½ 16
10	Ditto 2nd issue	4	0	1½ 2
10	Ditto pref., 6 per cent.	10	0	11½ 11½
20	British Wagon Co. [L]	10	0	1½ 1½
10	Gloucester [L]	10	0	9½ 10
10	Ditto 5th issue	5	0	¾ 1
5	Met. Rail. Car. & Wagon Co. [L]	5	0	2½ 3
5	Ditto pref., 6 per cent.	5	0	¾ 1
10	Midland Rail. Car. & Wag. [L]	10	0	11½ 12
10	Ditto pref., 6 per cent.	10	0	dis
20	North Central Wagon Co.	20	0	5 —
5	Rail. Car. [L] Oldbury	5	0	5 5½
5	Ditto pref., 6 per cent.	5	0	5 5½
20	Sheffield Wagon Co. [L]	15	0	¾ ¾
10	Yorkshire Wagon Co. [L]	10	0	¾ ¾

15	Poster, Porter, and Co. [L.]	10	10	17	17
17	Hudson's Bay Company	17	10	163	118
8	Stk. Illinois & M. R. R.	10	10	116	116
8	Stk. Ditto 2nd Bond, 7 per cent.	100	0	80	85
7½	Imperial Credit [L.]	7	10	7½	7½
8½	Lehigh Val. Con. Mort., A. T. p. c.	100	0	105	105
10	Milner's Safe [L.]	10	0	10	10
25	National Discount [L.]	10	0	10½	11½
8	Stk. Gen. R. R. & C. Co.	10	0	98	100
10	Pawson and Co. [L.]	6	10	6	dis 4 p
5	Pennacular and Oriental Steam	50	0	55	57
8½	Pennsylvania Gen. Mort. 5 p. c. 1880	100	0	114	115
8½	Do. Con. Sink Fund, 5 p. c. 1905	100	0	109	110
8½	Stk. Scottish Australasian, p. c.	100	0	180	180
8½	Stk. Ditto 6 per cent. pref.	100	0	124	129
8½	Ditto New Ordinary	50	0	6	8
12	Telegraph Const. & Maint. [L.]	12	0	35	36
5	Ditto, 2nd Bonus, 3 per cent.	5	0	2½	3
10	Tharsis Sulphur & Copper Co.	10	0	30½	31
8½	Union Pacific and Gt. Ind. St. R.	100	0	110	116
8½	Union Pacific Ry., 1st Mort.	100	0	112	113

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